SERVICE MANUAL

(Machine code: C244/C239)

TABLE OF CONTENTS

1. OVERALL INFORMATION

1.1 ESSENTIAL DIFFERENCES BETWEEN C244/C239 AND C235 MODELS

No.	Item	Remarks
1	Main Processing Unit (MPU)	Main Processing Unit (MPU) is unique to each model.
2	Double feed detection sensor, Double feed detection board	Detects when the paper double feeds. Refer to the detailed section descriptions. Not used in the C239.
3	Memory Board	The C244 and C239 models do not include the memory board as standard equipment (option only).
4	Master duct sensor	Detects when a master remains in the master buffer duct. Refer to the detailed section descriptions.
5	New SP modes	Some SP modes were changed. Refer to the service tables section for details.
6	Ink and master	Supplies for 400 dpi are used in the C239 model.
7	Thermal Head	A 400 dpi thermal head is used in the C239 model.
8	Master Feed Control Motor	Not used in the C239. There is a clutch in the master making unit instead of the master feed motor.
9	Anti-Static Roller	Not used in the C239.
10	Quality Blade	Not used in the C239.
11	Side Fence Lock Lever	Not used in the C239.

1.2 SPECIFICATIONS

1.2.1 FOR MODEL #C244

NOTE: The specifications are identical to the C235 model, expect for the power source, power consumption and available options.

Power Source:	120 V, 60 Hz: 2.4A 220 - 240 V, 50/60 Hz 1.4A	
Power Consumption:	120 V version:	Maximum: 240 W
	220 - 240 V version:	Maximum: 230 W

Available Options:	A3 Drum A4 Drum Document Feeder Exposure Glass Cover Interface Cable Type85 Editing Function Type85 Printer Unit Type 80RCP80 Sorter TC-II

1.2.2 FOR MODEL #C239

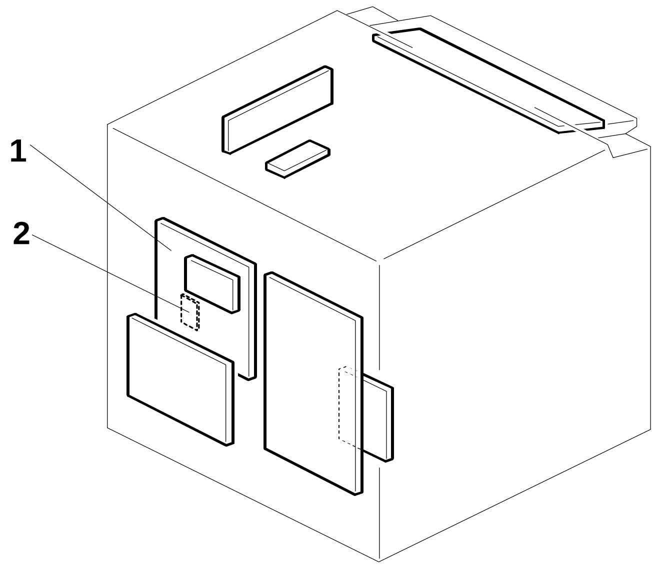
NOTE: 1) Only the items that are differences from the C235 model are shown below.
2) Master and ink are different from the C235 model. Supplies for C233 model are not commonly used in the C239 model.

Master Processing:	Digital with 400 dpi thermal head
Scanning (Pixel Density):	400 dpi CCD
Master Process Time:	Platen mode: Less than 16 seconds (A3 paper) Less than 12 seconds (A4 paper) ADF mode: Less than 20 seconds (A3 paper) Less than 17 seconds (A4 paper)
Master Eject Box Capacity:	60 masters / A3 size (Normal conditions)
Power Source:	120 V, 60 Hz: 3.2A 220 - 240 V, 50/60 Hz 1.7 A
Power Consumption:	120 V version: Maximum: 340 W 220 - 240 V version: Maximum: 320 W
Weight:	97 kg [213.9 lb] 104 kg [229.3 lb] with ADF
Master Type:	Thermal master roll type: 320 mm width, 110 m/roll Yield: 200 masters/roll (at A3 size) Max run length per master: 2,000 prints
Available Options:	A3 Drum A4 Drum Document Feeder Exposure Glass Cover Interface Cable Type85 Editing Function Type85 Printer Unit Type 80RCP80 Sorter TC-II

1.3 NEW ELECTRICAL COMPONENTS

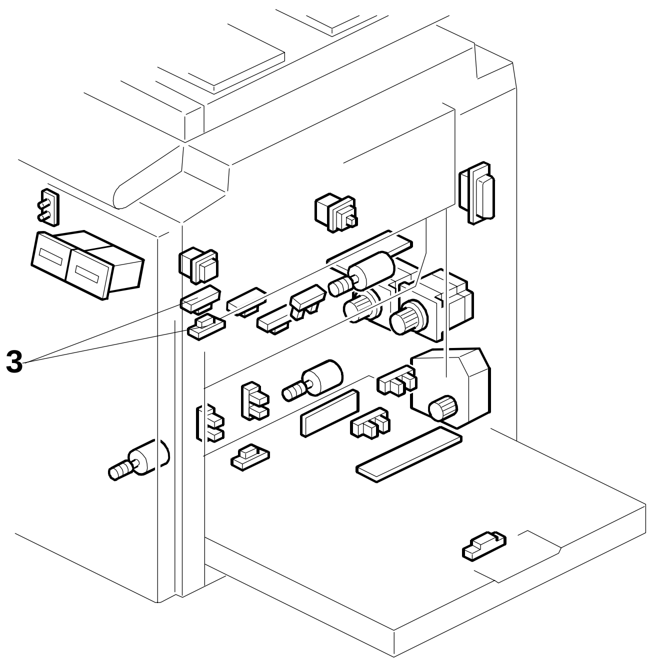
1.3.1 FOR MODEL #C244

Printed Circuit Board Layout (For model #C244)



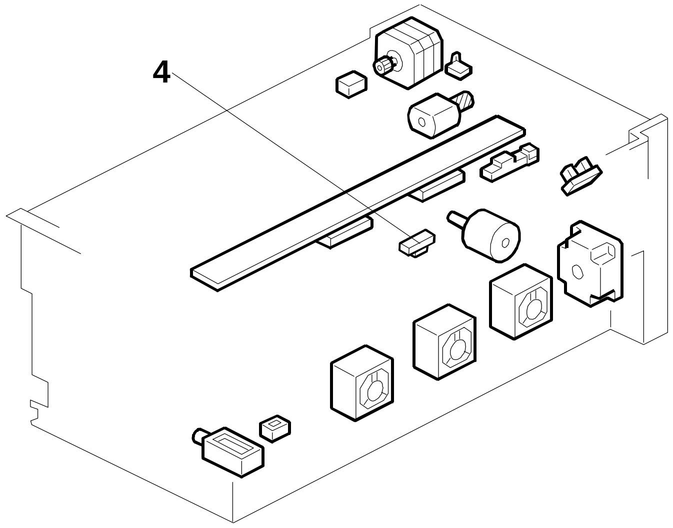
C244V103.WMF

Paper Feed Section (For model #C244)



C244V001.WMF

Master Making Unit (For model #C244)



C244V000.WMF

Table of Electrical Components

Boards

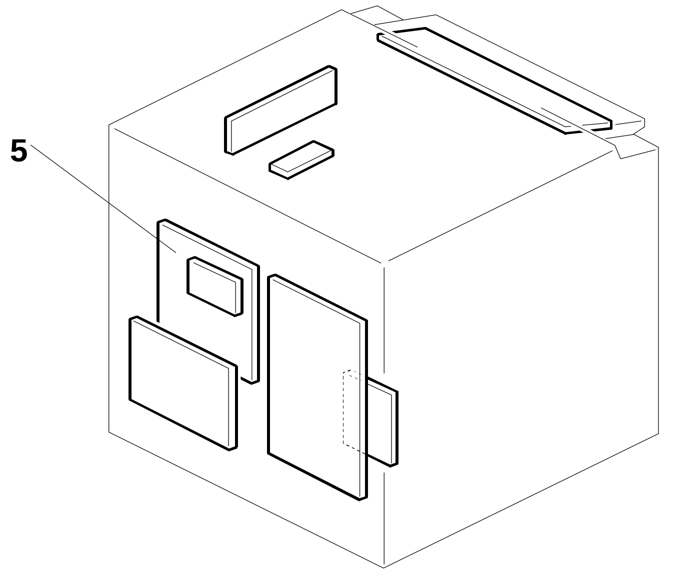
Index No.	Name	Function
1	Main Processing Unit (MPU)	Controls all machine functions both directly and through other boards.
2	Double Feed Detector Board	Controls the double feed sensor

Sensors

Index No.	Name	Function
3	Double Feed Sensor	Detects the paper double feeds
4	Master Duct Sensor	Detects when a master remains in the master buffer duct

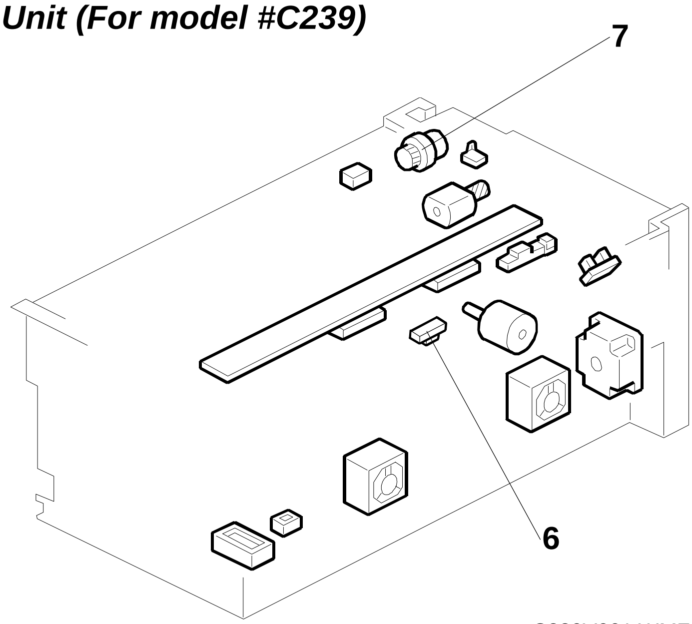
1.3.2 FOR MODEL #C239

Printed Circuit Board Layout (For model #C239)



C239V501.WMF

Master Making Unit (For model #C239)



C239V001.WMF

Table of Electrical Components

Boards

Index No.	Name	Function
5	Main Processing Unit (MPU)	Controls all machine functions both directly and through other boards.

Sensors

Index No.	Name	Function
6	Master Duct Sensor	Detects when a master remains in the master buffer duct

Others

Index No.	Name	Function
7	Master Feed Clutch	Controls the master feed control roller operation to feed the master

2. DETAILED DESCRIPTIONS

In this section, only the detailed descriptions that are unique to the C239 and C244 models are explained.

2.1 IMAGE PROCESSING

2.1.1 THERMAL HEAD

For model #C239

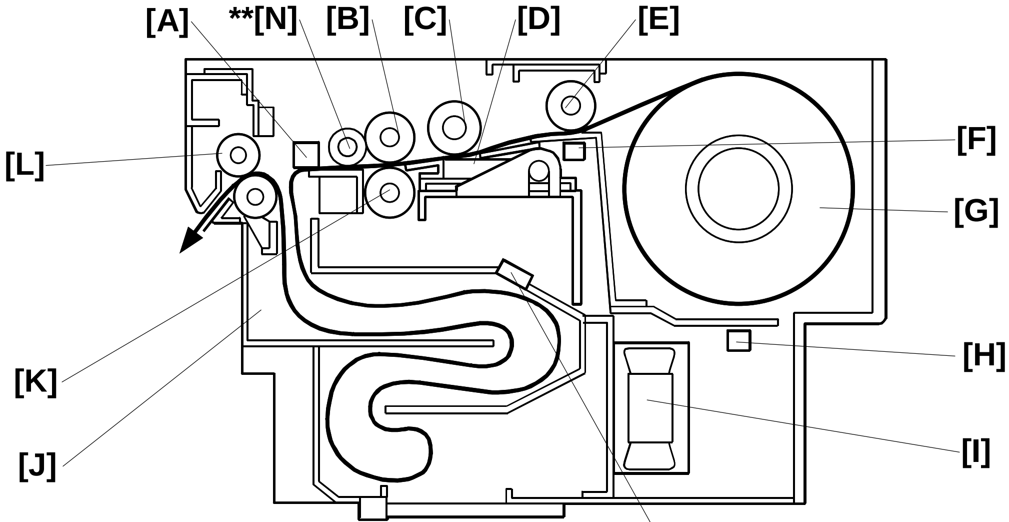
Specifications

- Length .... 292.6 mm
- Number of thermal head elements....... 4608
- Density of thermal head elements........ 400 dpi

NOTE: The thermal head of the C244 is common with the C235 model.

2.2 MASTER FEED

2.2.1 OVERVIEW



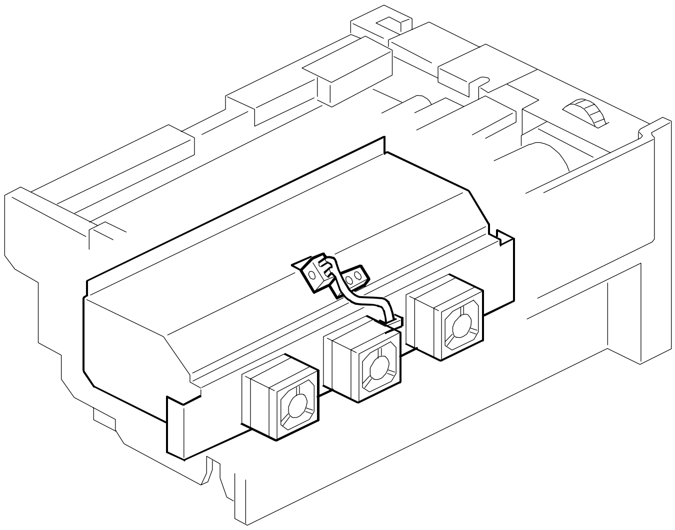
C244D003.WMF

A: Master Edge Sensor	F: Master Set Sensor	K: Cutter
B: Tension Roller	G: Master Roll	L: Master Feed Control Roller
C: Platen Roller	H: Master End Sensor	*M: Master Duct Sensor
D: Thermal Head	I: Master Vacuum Fans	**N: Anti-Static Roller
E: Master Set Roller	J: Master Buffer Duct	

*: New for #C244 and #C239
**: Unique to #C244

2.2.2 MODIFICATIONS FOR JAM REMOVAL

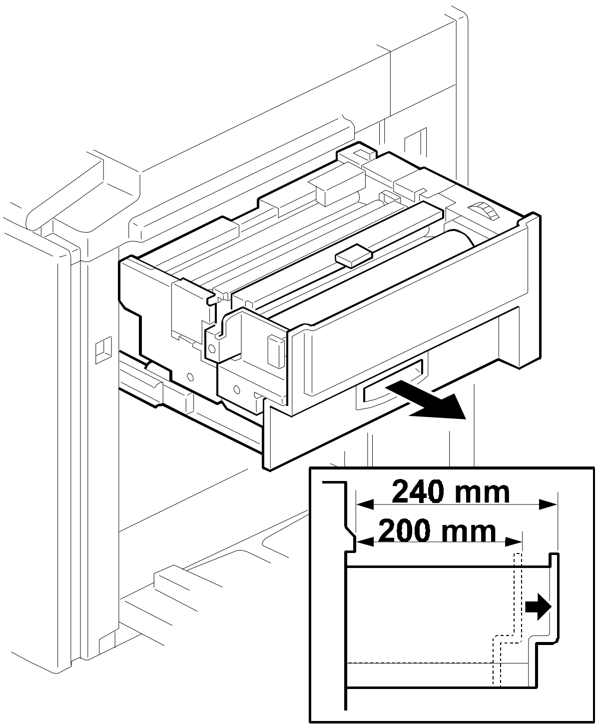
Master Duct Sensor Mechanism



C244D500.WMF

The master duct sensor detects when a master remains inside the master duct, and the machine prevents a master jam when printing starts by displaying a warning.

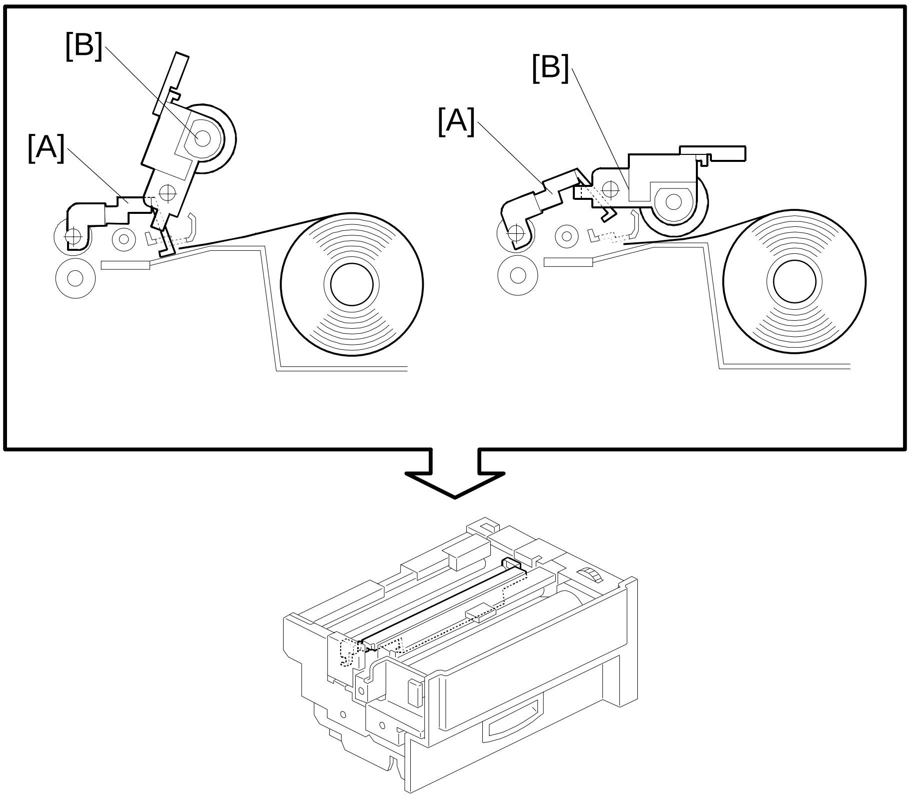
Pull-out distance



C244D501.WMF

Compared with the predecessor models (#C229, #C232, #C233, #C235), the pull out distance of the master making unit was increased from 200 mm to 240 mm. This is to provide for easier removal of jammed master at the master feed control roller and in the duct area.

Master Shutter Mechanism



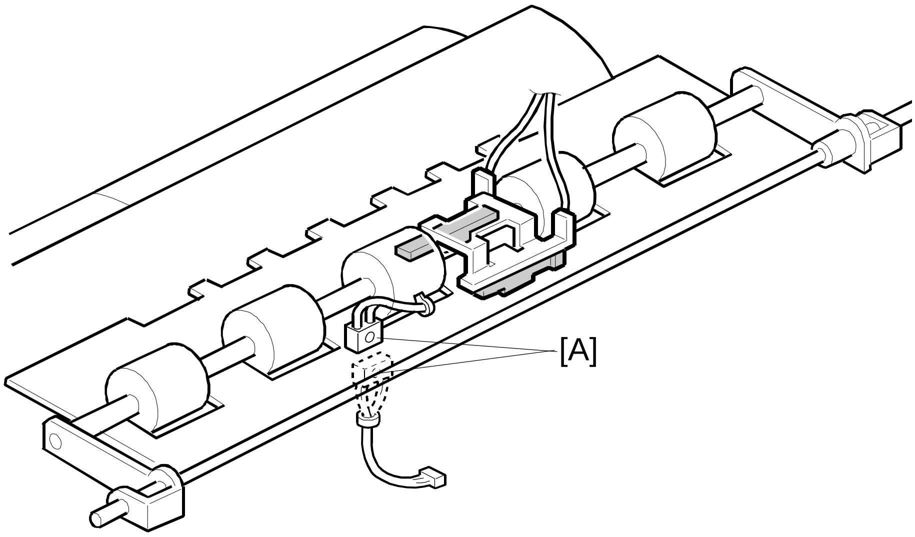
C244D000.WMF

The master shutter [A] was added to prevent the master from being set in the wrong position. When the master set roller [B] lifts, the master shutter [A] ensures that the master is in the correct position.

2.3 PAPER FEED

2.3.1 DOUBLE FEED DETECTION MECHANISM

NOTE: For model #C244 only



C244D503.WMF

The double feed sensor [A] detects double feeds by measuring the brightness of light passing through the paper. The machine compares the brightness detected while the current sheet of paper is being fed with the brightness detected while the previous sheet was fed.

The sensor takes the first sheet of the job as the standard, to account for the different thicknesses and colors of paper that various users may use. However, this means that a double feed will not be detected for the first sheet of paper, and it also means that if the user changes paper type in mid-job, a double feed could be detected.

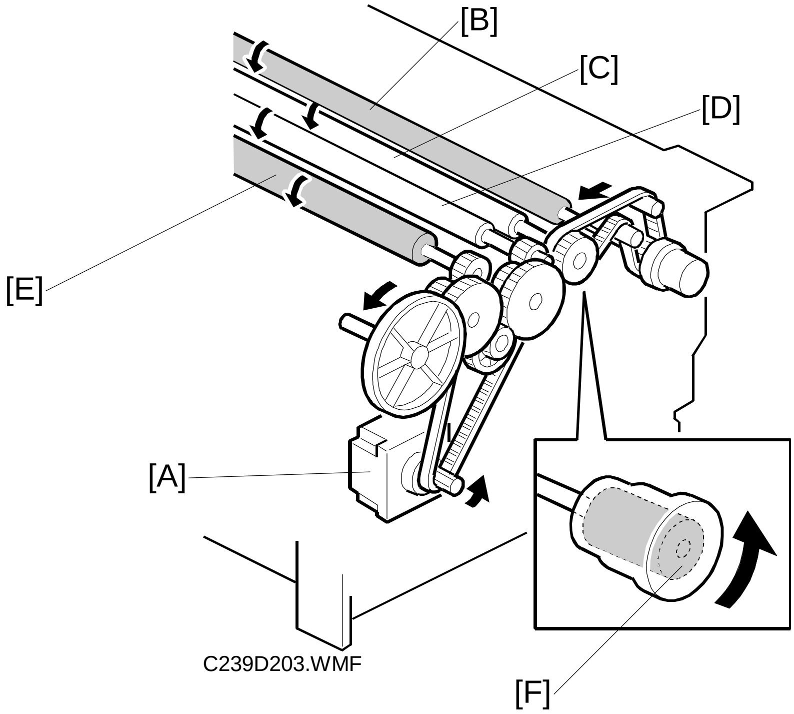
If the machine detects a double feed, it generates an alarm, feeds out all paper currently in the feed path, and stops printing.

This feature can be switched on by the user if required (User tool 4-28: Double Feed Warning). SP 3-2-10 also does this.

2.3.2 MASTER MAKING AND FEED MECHANISM

NOTE: 1) For model#C239 only.
2) This mechanism in the C239 is the same as in the C233.

Master Feed Mechanism



The master feed motor [A], a stepper motor, drives the master feed control [B], tension [C], platen [D] and master set [E] rollers.

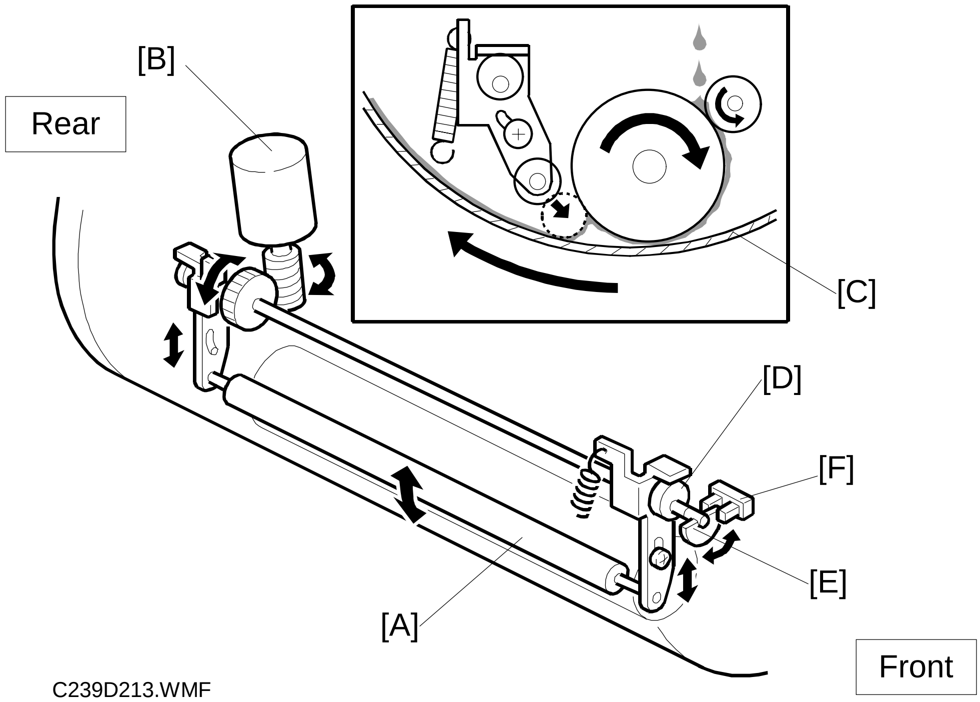
The tension roller feeds the master slightly faster than the platen roller, to prevent the master from creasing. Therefore, the master between the platen roller and thermal head is always under tension.

There is a torque limiter [F] built into the tension roller drive gear. This allows the tension roller to become free from the master feed motor drive when the master is under excessive tension, to prevent damage to the master.

2.4 DRUM

NOTE: 1) For model #C239 only (the drum for C244 is the same as for C235)
2) This mechanism in the C239 is the same as in the C229 and C233.

Drum Idling Mechanism



C239D213.WMF

Quality Start Mode

In Quality Start mode; the machine enters the drum idling mode before printing. This ensures that the first print has sufficient ink density even if the machine was not used for a long time.

The user selects Quality Start mode by pressing a key on the operation panel. The number of idling rotations is fixed at 45. However, user tool 4-12 can change this number.

NOTE: In Quality Start mode; the drum idling motion starts, before printing, when the Start key is pressed. However, if there is no master on the drum, drum idling is not performed.
Even if the Quality Start mode is active, and there is no master on the drum, drum idling is skipped although the LED on the operation panel turns on. When printing for the next original starts, the machine enters drum idling mode if a large enough master is wrapped around the drum (it will not be done for an A4 master on an A3 drum).

The drum idling roller [A] puts the ink onto the screens and master before printing. The idling roller motor [B] turns to press the drum idling roller against the inner surface of the drum screen [C]. The spring tension supplies additional force for this.

The cam [D] is turned by the motor, moving the drum idling roller towards the drum screen. The actuator disk [E] interrupts the idling roller HP sensor [F] when the drum idling roller is being used.

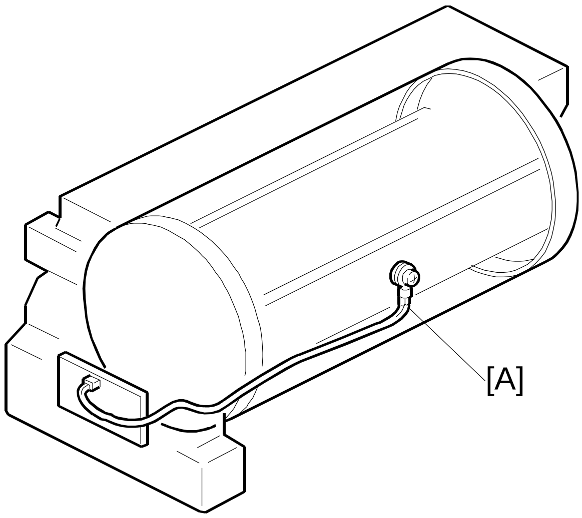
Auto Quality Start Mode

Auto Quality Start is done if the user does not select Quality Start mode. (It can be disabled with a user tool.)

In Auto Quality Start mode, the idling motion depends on how long the machine was not in use and on the temperature detected by the thermistor [A] in the drum.

The CPU detects a low temperature condition if the thermistor [A] reports approximately 15 °C or lower. If the detected temperature is 28 °C or higher, it is a high temperature condition.

The number of drum idling rotations depends on temperature and period of machine inactivity, as shown in the following table.



C239D111.WMF

NOTE: User Tool 4-14 can be used to change the number of rotations for each of these conditions.

Period/ Temperature	Less than 4 hours	4 to 24 hours	24 to 72 hours	Over 72 hours
High (28 °C or higher)	0	0	0	15
Normal (15 to 28 °C)	0	0	15	15
Low (15 °C or lower)	0	15	45	45

NOTE: The drum rotation speed during idling is fixed at 90 rpm.

Drum Rotation Speed during Idling

Whether the machine is in Quality Start mode or not, the drum idling roller is always used for the trial print (the print to complete the master making), and for the first and second prints. If a low temperature condition is detected, the drum idling roller is also used for the third print.

The drum rotation speed varies during this mode as shown in the table below. In all cases, the drum idling roller returns to home position when drum rotation speed reaches 75 rpm.

- Change of drum rotation speed (rpm) with temperature -

Temperature	Trial Print	1st Print	2nd Print	3rd Print	4th Print	5th Print	6th Print
High (above 28 °C)	16 Idling Roller On	60 Idling Roller On	75 Idling Roller Returned	90	105	120	120
Normal (15 °C ~ 28°C)	16 Idling Roller On	30 Idling Roller On	60 Idling Roller On	75 Idling Roller Returned	90	105	120
Low (below 15 °C)	16 Idling Roller On	16 Idling Roller On	30 Idling Roller On	60 Idling Roller On	75 Idling Roller Returned	90	105

NOTE: These figures apply to the highest printing speed (speed 5, which is at 120 rpm).

3. INSTALLATION

There are no differences from the C235 model in this section, except that the Editing Function Type 85, the Interface Cable Type 85 installation procedures were added.

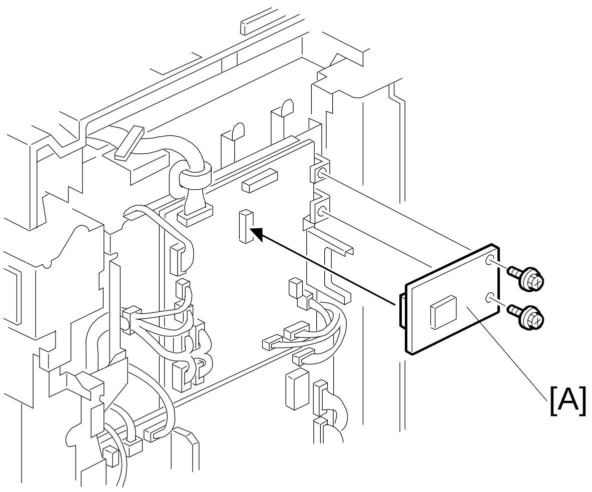
3.1 EDITING FUNCTION TYPE 85 INSTALLATION (OPTION)

3.1.1 ACCESSORY CHECK LIST

Check the quantity and condition of the accessories in the box against the following list:

Description	Quantity
1. Stepped Screw	2

3.1.2 INSTALLATION PROCEDURE



C244I500.WMF

1. Remove the rear cover (6 screws).
2. Connect the Editing Function board [A] to CN106 on the MPU (2 screws).

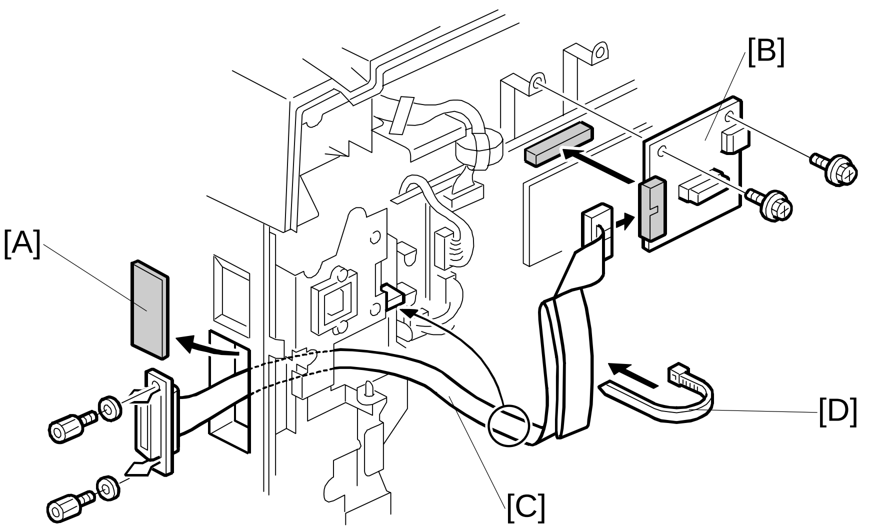
3.2 INTERFACE CABLE TYPE 85 INSTALLATION (OPTION)

Check the quantity and condition of the accessories in the box against the following list:

Description	Quantity
1. Screw	2
2. Spacer	2
3. Video I/F board	1
4. Cable	1
5. Bind	1

3.2.1 INSTALLATION PROCEDURE

1. Remove the rear cover (6 screws).
2. Cut away the blindfold cover [A] on the right rear cover.
3. Install the Video I/F board [B] to the MPU. (2 screws)
4. Connect the cable [C] to the video I/F board. (2 screws, 2 spacer)
   NOTE: You need to adjust the length of harness using the bind [D] enclosed.



C244I520.WMF

5. Reinstall the rear cover

4. SERVICE TABLES

Some SP modes were checked or newly added for the C244 and C239 models. The following table shows all of the items in the service program mode.

NOTE: The marks beside the SP mode numbers in the following tables represent the following meanings.

*: A new item was added or the default setting was changed.
**: New item, used for the C239 models but not used for the C244 models.
***: New item, used for the C244 models but not used for the C239 models.

Main Menu Number List

1. Data Logging
2. Basic Settings
3. System Settings
4. Input Test Mode
5. Output Test Mode
6. System Adjustment
7. Memory Data Clear
8. System Test
9. Printer Controller

4.1 SERVICE PROGRAM TABLE

1. Data Logging

No.	Display	No.	Menu	Function
1-1	Master Counters	1	Total Master Counter	Total master counter.
		2	Total Master Counter - ADF	Master counter made in ADF mode.
1-2	Master Counters - Size	1	A3/DLT	Master counters for each original size used. "-L": Lengthwise feed
		2	B4/LG	
		3	A4-L/LT-L	
		4	A4/LT	
		5	B5-L	
		6	B5	
		7	Other Sizes	
1-3	Master Counter - Orig Type	1	Letter Mode	Master counters for each original type used.
		2	Letter/Photo Mode	
		3	Photo Mode	
		4	Pencil Mode	
		5	Tint Mode	
1-4	Master Counter - Ppr Type	1	Standard Paper	Master counters for each paper type used.
		2	Thick Paper	
		3	Thin Paper	
		4	Special	
		5	User 1	
		6	User 2	
1-5	Master Counter - Copy Mode	1	Economy Mode	Master counters for various copy modes.
		2	Combine 2	
		3	Combine 4	
		4	Memory Combine	
		5	Enlargement Mode	
		6	Reduction Mode	
		7	Zoom Mode	
		8	Directional Magnification	
		9	Auto Magnification	
		10	Make-up Mode	
		11	Make-up Mode-Photo	
		12	Margin Erase	
		13	Online Mode	
		14	Overlay Mode	
		15	Format Overlay	
		16	Online Overlay	
		17	Memory Overlay	
		18	Date Stamp	
		19	Page Number	
		20	Default Stamp	
		21	Memory Original	

No.	Display	No.	Menu	Function
1-5	Master Counter - Copy Mode	22	Up/Down Shift	
		23	Side Shift	
		24	Short Master	
		25	Image Rotation	
		26	Same-No. Class	
		27	By-Class Class	
		28	Manual Class	
		29	Job Separator	
		30	Autocycle	
		33	Sort	For details, see the sorter service manual.
		34	Class Sort	
		35	Online Sort	
1-6	Master Counters - Sort	1	1-20 copies per Master	Master counters for sorter mode. For details, see the sorter service manual.
		2	21-40 copies per Master	
		3	41-50 copies per Master	
		4	51-80 copies per Master	
		5	81- copies per Master	
1-7	Job Counters - Sort	1	1-5 masters per Job	Job counters for sorter mode. For details, see the sorter service manual.
		2	6-10 masters per Job	
		3	11-20 masters per Job	
		4	21-30 masters per Job	
		5	31-50 masters per Job	
		6	51- masters per Job	
1-8	Print Counters	1	Total Print Counter	Total print counter.
		2	Print Counter-Color Drum	Print counter made with the optional color drum.
1-9	Print Counter - Size	1	Over A3/DLT	Print counters for each paper size used. "-L": Lengthwise feed
		2	A3/DLT	
		3	B4/LG	
		4	A4-L/LT-L	
		5	A4/LT	
		6	B5-L	
		7	B5	
		8	A6-L	
		9	Under A6-L	
		10	Other Sizes	
1-10	Print Counters - Ppr Type	1	Standard Paper	Print counters for each paper type used.
		2	Thick Paper	
		3	Thin Paper	
		4	Special	
		5	User 1	
		6	User 2	
1-12	Print Counters - Sorter	1	Larger than A4	Print counters for sorter mode. For details, see the sorter service manual.
		2	A4 and Smaller	
		3	From Paper Table	
		4	From Tray 1 (Feed Station)	
		5	From Tray 2 (Feed Station)	

Service Tables

No.	Display	No.	Menu	Function
1-13	Copies Per Orig Counters	1	1 - 3 Prints	Copies-per-original counters.
		2	4 - 5 Prints	
		3	6 - 10 Prints	
		4	11 - 20 Prints	
		5	21 - 30 Prints	
		6	31 - 50 Prints	
		7	51 - 70 Prints	
		8	71 - 100 Prints	
		9	101 - 200 Prints	
		10	201 - 500 Prints	
		11	501 - 1000 Prints	
		12	Over 1000 Prints	
1-14	Counter/Jam Ratio	1	Master Set Error	Counters for various types of jams. Jam ratios are also displayed.
		2	Master Clamp Error	
		3	Master Cut Error	
		4	Master Eject ON Check	
		5	Pressure Plate Error	
		6	Master Eject OFF Check	
		7	Registration ON Check	
		8	Feed Timing ON Check	
		9	Feed Timing OFF Check	
		10	Paper Upper Wrapping	
		11	Paper Lower Wrapping	
		12	Paper Exit OFF Check	
		13	DF Feed-in Error	
		14	DF Feed-out Error	
		*15	Master Duct OFF Check	
1-15	Feed-in/Reg Roller Jams	1	Jam P0 Standard	Feed-in jams and registration roller jams for various paper sizes and paper types.
		2	Jam P0 Thick	
		3	Jam P0 Thin	
		4	Jam P0 Others	
		5	Jam P1 Standard	Registration roller jams (when the paper feed timing sensor stays on) for various paper sizes and paper types.
		6	Jam P1 Thick	
		7	Jam P1 Thin	
		8	Jam P1 Others	
		9	Jam P2 Standard	Upper wrap, lower wrap, and feed-out jams for various paper sizes and paper types.
		10	Jam P2 Thick	
		11	Jam P2 Thin	
		12	Jam P2 Others	
1-17	Jam Counters - Sorter	1	Relay Transport section	Counters for various location jams in the sorter. For details, see the sorter service manual.
		2	Horizontal Trans. section	
		3	Vertical Trans. section	
		4	Lower 20 Bins section	
		5	Upper 20 Bins section	

No.	Display	No.	Menu	Function
1-18	Other Counters	1	Set Master Counter	
		2	Ejected Master Counter	
		3	Ink Pump Rotation Count	
		4	Master End Counter	
		5	Ink End Counter	
		6	Master Full Counter	
		7	Original Counter ADF	
		8	Original Counter Platen	
		9	Misfeed Setting Counter	Number of times the user changed the "Misfeed" setting for paper feed or separation pressures.
		10	Multifeed Setting Count	Number of times the user changed the "Multifeed" setting for paper feed or separation pressures.
		11	Start Error Message Cnt.	Number of times an error message appeared when the Start key was pressed.
		14	Open Counter Cover on Move	See the sorter service manual.
1-19	Machine Information	1	ROM Part Number	
		2	Serial Number	Use this to view the data input with SP 3-1-1.
		*7	ROM Version	
		*14	JS Sorter ROM Version	Displayed when the sorter is installed.
		*16	Power On Time	
1-20	Service Information	1	Tel. Number for Service	Enter data with SP3-1-6 at installation if required.
		2	SC Counter	Displays the latest 20 records of the SC codes displayed. Use the arrow keys to view the records.
***1-21	Double Feed Counters	1	From Paper Table	
		2	From Tray 1	Do not use (Japanese version use only).
		3	From Tray 2	
*1-22	Sales Mode Check	1	Save Ink in Sorter Mode	Do not use (Japanese version use only).
		2	Japan Display Type	
		3	Swap Start Key	
		4	Ink Supply Pre-Printing	
		5	Set Job Separation	
		6	Set Key Counter	
		7	Set Key Card	
		8	Paper Delivery Table	
		9	Main Scan Position	
		10	Scan Start Position - DF	

Service Tables

No.	Display	No.	Menu	Function
*1-22	Sales Mode Check	11	Scanning Speed	Do not use (Japanese version use only).
		*12	Config data	
		*13	Controller NVRAM	
		*14	NIB NVRAM	

2. Basic Settings

No.	Display	No.	Menu	Function	Default	Setting
2-1	Default User Settings	1	Print Speed	See Note 1.	3	1 to 5
		2	Default Image Position - Tp/Btm		0	-15.0 to 15.0 mm
		3	Default Image Position Lt/Rt		0	-10.0 to 10.0 mm
		4	Make-up Pattern1	See Note 2.	1	1 to 40
		5	Make-up Pattern2		1	1 to 40
		6	Make-up Pattern3		1	1 to 40
		7	Make-up Pattern4		1	1 to 40
2-2	Disable Sensors	1	Ink Detection	Enables/disables various sensors for test purposes.	ON	ON/OFF
		2	Paper Length Detection		ON	ON/OFF
		3	Paper Size Detection		ON	ON/OFF
		4	Drum Master Detection		ON	ON/OFF
		5	Platen Cover Set Detect		ON	ON/OFF
		6	ADF Close Detection		ON	ON/OFF
2-3	JS Sorter Settings	1	Set Unit	For details, refer to the sorter service manual.	U&L	U&L/Upper/ Lower
		2	Sort Number Limit		No	Yes/No
		3	Ink Save Mode for Sorter		OFF	ON/OFF
		4	1 Bin Capacity Limit		50	1 to 50
		5	Interval Jogger Set - Sort		0	0 to 1
		6	Interval Jogger Set - Class		0	0 to 1
		7	Speed Setting		OFF	ON/OFF
2-4	Destination Settings	1	Set Type by Code	By entering the machine code (e.g. for C244-27, input 244-52), the following values go to the factory settings for that model: * User tool 1-4 (mm/inch) * User tool 1-5 (language) * SP 2-4-3 * SP 2-4-4 **NOTE** 244-52: North America 244-27: Ricoh Europe * Use the point (**.**) key to enter “-.”	-	-
		2	Display Type (for Japan)	Do not use.	0	0 to 2

Service Tables

No.	Display	No.	Menu	Function	De-fault	Setting
2-4	Destination Settings	3	Drum Selection	See Note 3.	-	DLT/A3
		4	Machine Destination	See Note 4.	0	0: Other 1: Japan
2-5	T Head Energy Settings	1	Thermal Head Energy Temperature Control – Black Ink	See Note 5.	ON	ON/OFF
		2	Thermal Head Energy Temperature Control – Color Ink		ON	ON/OFF
		3	T Head Energy - Standard	Thermal head energy in standard and economy modes, as percentage of full power.	7	0 to 50%
		4	T Head Energy - Economy		13	0 to 43%
2-6	Other Settings	1	APS A5 Size Detection	See Note 6.	No	Yes/No
		2	Swap Start Key	See Note 7.	No	Yes/No
		3	A3 Master 2 Count Up	See Note 9.	2	1 to 3
		4	Num of Matser Eject Trial	This specifies the number of master eject attempts before an error is indicated.	2	1 to 3
		5	Auto Master Save Select		Auto	Auto/OFF
		6	Ink Supply w/Trial Print	ON: Ink is supplied while a trial print is made after making a new master.	OFF	ON/OFF
		7	Ink Auxiliary Supply	See Note 11.	0	0 to 2
		8	Drum Idling	See Note 10.	OFF	ON/OFF

Notes

1: 2-1-1 (Default print speed, cpm)

1: 60, 2: 75, 3: 90, 4: 105, 5: 120

2: 2-1-4 to -7 (Default make-up patterns 1 to 4)

0 to 39: Preset patterns, from 1 to 40

3: 2-4-3 (Drum Size – A3 or DLT)

This setting changes the master making area. It also affects the available range for the default image position shift (top/bottom, SP2-1-2).

A3: -15 mm to + 15 mm
DLT: -10 mm to + 10 mm

4: 2-4-4 (Machine Destination)

Always set this mode as “Other.” If “Japan” is selected, User Tools 6-10 that are not used for other versions is displayed.

5: 2-5-1 and -2 (Thermal head energy control with temperature)

If this is switched on, the energy supplied to the thermal head will depend on the temperature measured by the thermistor in the drum.

	Less than 19 °C	More than 19 °C
Standard	SP 2-5-3 value (Default: 7%)	(Y+T–19+1)% (Limit: 22%)
Economy	SP 2-5-4 value (Default: 20%)	(Y+T–19+1+Z)% (Limit: 40%)

Y: SP2-5-3 value
T: The ink temperature
Z: SP2-5-4 value

6: 2-6-1 (APS A5 Size Detection)

This determines how the machine behaves if the APS sensors cannot detect the original because it is too small.

0: No original detected, 1: A5 assumed

Default: 0

7: 2-6-2 (Swap Start Key)

Enables swapping *the Start (master making) key function* and *the Print key function* depending on the end user”s preference. (“No” is the default setting.)

8: 2-6-3 (Sharpen Image Mode)

When this SP mode is on, fine details become more apparent in letter mode. But the edges of paper pasted onto the original might appear on the print.

9: 2-6-4 (Double count-up for A3 masters)

0: The counters go up by 1 only.

1: The master counter goes up by 2.

2: The master and print counters both go up by 2.

10: 2-6-8 (Drum Idling)

This mode has two options: “Fast” and “Slow”. Slow is the default setting.

Fast mode (High, Normal) skips the 30, 60, 75-rpm drum rotation speed at the beginning of printing. Consequently, the drum rotation speed increases as shown in the table below. Slow mode (Normal, Low) does not skip the 30, 60, 75-rpm drum rotation speed. Note that there are two cases depending on the temperature inside of the drum, detected by the thermistor.

SP2-6-8 Setting	Drum Temperature	Trial Print	1st Print	2nd Print	3rd Print	4th Print	5th Print	6th Print
Slow	High 15 °C or above	16	60	75	90	105	120	120
	Normal 15 °C ~ 28°C	16	30	60	75	90	105	120
	Low Below 15 °C	16	16	30	60	75	90	105
Fast	High 15 °C or above	16	90	105	120	120	120	120
	Normal 15 °C ~ 28°C	16	90	105	120	120	120	120
	Low Below 15 °C	16	16	30	60	75	90	105

* These figures apply to the highest printing speed (120-rpm).

11: 2-6-7 (Ink Auxiliary Supply)

This mode determines when ink is detected and supplied. There are three possible settings.

- “0: After”: Ink detection and supply are done when a print job finishes.
- “1: Before”: They are done when the Print Start key is pressed (and before starting printing).
- “2: No”: Ink is not added except during normal printing.

Note that if the machine detects a low ink condition during printing, ink is supplied regardless of this setting.

To minimize the wait time for drum idling, ink supply prior to starting printing has been eliminated by setting this mode to “0: After” as the default. With older firmware, when the Print Start key is pressed, the machine carries out the ink detection and (if low ink is detected) starts to supply ink before starting printing. (This ink detection is likely only when an operator cancels the Auto-cycle mode, which is selected by default. In the Auto-cycle mode, the machine enters the printing process without detecting the ink after making a master.)

3. System Settings

No.	Display	No.	Menu	Function	Default	Setting
3-1	Installation Settings	1	Serial Number	Use these to input the serial numbers, etc. Do these at installation if required. The data is used in the data printout mode in the system test. (SP3-1-1 can be seen in SP1-19. SP3-1-6 can be seen in SP1-20-1.)	-	
		*6	Tel. Number for Service		-	
		*7	Date		-	
		*8	Installation Date		-	
		*9	First Power On Date		-	
3-2	Unit Settings	1	Set Job Separation		Yes	No/Yes
		2	Set Key Counter	Set to Yes if installed.	No	No/Yes
		3	Set Key Card	Japan only	No	No/Yes
		4	Set Paper Delivery Table	Japan only	No	No/Yes
		5	Set Paper Feed Station	Japan only	No	No/Yes
		6	Set Sorter	Set to Yes if installed.	No	No/Yes
		*** 10	Double Feed Sensor	In Japan, this sensor is an option	Yes	No/Yes

4. Input Test Mode

SP No.	Display	No.	Menu
4-1	Scanner Unit	1	Scanner HP Sensor
		2	Original Length SN 0
		3	Original Length SN 1
		4	Original Width SN 2
		5	Original Width SN 3
		6	Original Length SN 4
		7	Original Length SN 5
		8	Platen Cover Sensor
4-10	Master Making Unit	1	Master Unit Set Sensor
		2	Cutter HP Sensor
		3	Master Set Sensor
		4	Master End Sensor
		5	Master Edge Sensor
		6	Platen Release Sensor
		7	Thermal Head Temperature
4-20	Master Eject Unit	1	Eject Box Set Sensor
		2	Master Eject Sensor
		3	Pressure Plate HP Sensor
		4	Pressure Plate Limit SN
4-30	Paper Feed Table	1	Paper Table Lowering SW
		2	Table Lower Limit Sensor
		3	Paper Table Height SN
		4	Paper Table Set Sensor
4-31	Paper Feed Table-Paper	1	Paper End Sensor
		2	Paper Length Sensor
		3	Paper Width Detection 0
		4	Paper Width Detection 1
		5	Paper Width Detection 2
		6	Paper Width Detection 3
		7	Paper Width Detection 4
		8	Paper Width Detection 5
4-40	Paper Feed Pressure	1	Paper Feed Pressure 0
		2	Paper Feed Pressure 1
		3	Paper Feed Pressure 2
		4	Paper Feed Pressure 3
4-41	Separation Pressure	1	Separation Pressure 0
		2	Separation Pressure 1
		3	Separation Pressure 2
		4	Separation Pressure 3
4-42	Friction Pad	1	1st Friction Pad HP Sensor
		2	2nd Friction Pad HP Sensor
		3	Friction Pad Position - Normal
		4	Friction Pad Position - Special

SP No.	Display	No.	Menu
4-50	Paper Transport	1	Paper Registration SN
		2	Paper Feed Timing Sensor
		3	Paper Feed Start Sensor
		4	Tray Feed Start SN
		5	Lower Wrapping Jam SN
		6	Paper Exit Sensor
		7	P Cylinder Feed Encoder
		8	Wing Upper Position SN
		9	Wing Lower Position SN
4-60	Around the Drum	1	1st Drum Position Sensor
		2	2nd Drum Position Sensor
		3	3rd Drum Position Sensor
		4	Drum Type Check 0
		5	Drum Type Check 1
		6	1st Drum Master Sensor
		7	2nd Drum Master Sensor
		8	Clamp Close Position SN
		9	Clamper Open Position SN
		10	A3 Cam Sensor
		11	A4 Cam Sensor
4-61	Image/Drum Shift HP SN	1	Image Shift HP Sensor
		2	Drum Shift HP Sensor
4-62	Ink	1	Ink Pump Sensor
		2	Ink Cartridge Set Sensor
		3	Ink Detection
		4	Drum Idling Roller HP SN
		5	Ink Temperature
4-80	Other Sections	1	Front Door Open Detect
		2	Main Motor Lock Detect
		3	Relay Guide Set Sensor
4-90	Job Separator Unit	1	Slider Upper Limit SN
		2	Job Separator Paper SN
		3	Slider Position Sensor
		4	Slider HP Sensor
4-100	Document Feeder Unit	1	Installation Detect
		2	Cover Open Sensor
		3	Registration Sensor
		4	Original Rear Sensor
		5	Original Set Sensor
		6	Original Length SN 1
		7	Original Length SN 2
		8	Original Width SN 1
		9	Original Width SN 2
		10	Position Sensor

SP No.	Display	No.	Menu
4-110	Paper Delivery Table	1	Delivery Table Paper SN
		2	Side Plate Set Sensor
		3	Side Plate Pulse Sensor
		4	Side Plate HP Sensor
		5	End Plate Set Sensor
		6	End Plate Pulse Sensor
		7	End Plate HP Sensor
4-130	JS Sorter	1	Lower Bin SN
		2	Lower Entry SN
		3	Upper Bin SN
		4	Upper Entry SN
		5	Relay Paper SN
		6	Horizontal Paper SN
		7	Delivery Table Position SN
		8	Sort Position SN
		9	Lower Side Jogger HP SN
		10	Upper Side Jogger HP SN
		11	Lower End Jogger HP SN
		12	Upper End Jogger HP SN
		13	Lower Turn Gate Limit SW
		14	Upper Turn Gate Limit SW
		15	Lower Turn Gate Paper SN
		16	Upper Turn Gate Paper SN
		17	Lower Door Safety SW
		18	Upper Door Safety SW
		19	Delivery Table Set SW
		20	Vert. Cover Safety SW
		21	Horiz. Cover Safety SW
		22	Stapler Cover Safety SW
		23	Lower Bins Operation SW
		24	Upper Bins Operation SW
		25	Not used
		26	Not used
		27	Not used
		28	Not used
*4-150	Options	1	Key Counter Detection
		2	Key Card Detection
		3	Not used

5. Output Test Mode

SP No.	Display	No.	Menu
5-001	Scanner Unit	1	Xenon Lamp
		2	Move Scanner - Scan
		3	Move Scanner - Return
		4	Move Scanner to HP
5-010	Master Making Unit	1	Master Feed Clutch
		2	Platen Release Motor
		3	Master Feed Motor
		4	Cutter Motor Forward
		5	Cutter Motor Reverse
		6	Move Cutter to HP
		7	Master Vacuum Fan
		8	Master Duct Entrance Sol
		9	Thermal Head ON
		*10	Apply Platen Pressure
		*11	Release Platen Pressure
5-020	Master Eject Unit	1	M Eject Motor Forward
		2	M Eject Motor Reverse
		3	Pressure Plate to Limit
		4	Press Plate to Eject Pos
		5	Pressure Plate to HP
5-030	Paper Feed Table	1	Paper Table Motor Up
		2	Paper Table Motor Down
5-040	Paper Pressure Motor	1	Paper Pressure Motor Up
		2	Paper Press Motor Down
		3	Paper Pressure Min
		4	Paper Pressure 1
		5	Paper Pressure 2
		6	Paper Pressure 3
		7	Paper Pressure 4
		8	Paper Pressure 5
		9	Paper Pressure Max
5-041	Separation Pressure Motor	1	Motor Up
		2	Motor Down
		3	Eject Position
		4	Separation Pressure Min
		5	Separation Pressure 1
		6	Separation Pressure 2
		7	Separation Pressure 3
		8	Separation Pressure 4
		9	Separation Pressure 5
		10	Separation Pressure Max
5-042	Friction Pad Motor	1	Standard
		2	Special

SP No.	Display	No.	Menu
5-050	Paper Feed Motor	1	Slowest
		2	30 rpm
		3	1st Speed
		4	2nd Speed
		5	3rd Speed
		6	4th Speed
		7	5th Speed
5-051	Registration Motor	1	Slowest
		2	30 rpm
		3	1st Speed
		4	2nd Speed
		5	3rd Speed
		6	4th Speed
		7	5th Speed
5-052	Paper Delivery	1	Wing Guide Motor Up
		2	Wing Guide Motor Down
		3	Air Knife Fan
		4	Transport Vacuum Fan
5-060	Drum Rotation	1	Slowest
		2	1st Speed
		3	2nd Speed
		4	3rd Speed
		5	4th Speed
		6	5th Speed
5-061	Clamper Motor	1	Clamper Motor - Open
		2	Clamper Motor - Close
5-062	Image Shift Motor	1	Image Shift Motor - ←
		2	Image Shift Motor - →
		3	Drum Shift Motor - ↑
		4	Drum Shift Motor - ↓
5-063	Drum Idling Roller	1	Drum Idling Roller ON
		2	Idling Roller Return
5-064	Around the Drum	1	Ink Pump Motor
		2	Printing Pressure Sol.
		3	Shift Pressure Cam to A3
		4	Shift Pressure Cam to A4
		5	3rd Drum Position LED - GREEN
		6	3rd Drum Position LED - RED
5-070	Counters	1	Print Counter Up
		2	Master Counter Up
5-080	Other Sections - Main Body	1	All Indicators On
		2	PSU Fan Motor
5-090	Job Separator Unit	1	Slider Lift Motor - Up
		2	Slider Lift Motor - Down
		3	Job Separator Motor - Forward
		4	Job Separator Motor - Reverse

SP No.	Display	No.	Menu
5-100	Document Feeder Unit	1	Feed Motor
		2	Feed Clutch
		3	Pick-up Solenoid
5-110	Paper Delivery Table	1	Side Plate-Extension
		2	Side Plate-Retraction
		3	End Plate-Retraction
		4	End Plate-Extension
5-120	Paper Feed Station	1	R-Tray1 Lift Motor: Up
		2	R-Tray1 Lift Motor: Down
		3	Tray1 Right Lock Sol.
		4	Tray1 Friction Pad Sol.
		5	Tray1 Connection Sol.
		6	L-Tray1 Lift Motor: Up
		7	L-Tray1 Lift Motor: Down
		8	Tray1 Left Lock Sol.
		9	Back Plate - Right
		10	Back Plate - Left
		11	Tray2 Lift Motor: Up
		12	Tray2 Lift Motor: Down
		13	Tray 2 Lock Sol.
		14	Tray2 Friction Pad Sol.
		15	Tray Feed Motor - Forward
		16	Tray Feed Motor - Reverse
		17	Tray Registration Motor
		18	Tray2 Feed Clutch
		19	Tray Relay Clutch
		20	Tray Exit Clutch
5-130	JS Sorter	1	Lower Turn Gate Mtr Upt
		2	Lower Turn Gate Mtr Down
		3	Upper Turn Gate Mtr Up
		4	Upper Turn Gate Mtr Down
		5	Relay Transport Motor
		6	Horizontal Transport Mtr
		7	Lower Vert. Transport Mtr
		8	Upper Vert. Transport Mtr
		9	Relay Switching Mtr To Sort
		10	Relay Switching Mtr To Non
		11	Lower S-Jogger Forward
		12	Lower S-Jogger Reverse
		13	Upper S-Jogger Forward
		14	Upper S-Jogger Reverse
		15	Lower E-Jogger Forward
		16	Lower E-Jogger Reverse
		17	Upper E-Jogger Forward
		18	Upper E-Jogger Reverse
		19	Not used
		20	Not used

SP No.	Display	No.	Menu
5-130	JS Sorter	21	Relay Trans. Fan Mtr
		22	Horz. Trans. Fan1 Mtr
		23	Horz. Trans. Fan2 Mtr
		24	Lower Vrt Trans. Fan1 Mtr
		25	Lower Vrt Trans. Fan2 Mtr
		26	Upper Vrt Trans. Fan1 Mtr
		27	Upper Vrt Trans. Fan2 Mtr
		28	Wing Guide Solenoid
		29	Delivery Table Lock SOL
		30	Lower Turn Gate SOL
		31	Upper Turn Gate SOL
		32	Sorter Free Run
*5-150	Options	1	Count-up Key Counter
		2	Count-up Key Card
		4	Not used

6. System Adjustment

NOTE: For model #C244

No.	Display	No.	Menu	Function	De-fault	Setting
6-1	Scan & Writing	1	Main Scan Pos. - Platen	Side-to-side registration adjustment; see Note 1.	0	-5.0 to 2.0 mm
		2	Main Scan Position - DF		0	-5.0 to 5.0 mm
		3	Scan Start Pos. - Platen	Scanning start line adjustment; see Note 2.	0	-2.0 to 5.0 mm
		4	Scan Start Position - DF		0	-5.0 to 5.0 mm
		5	Scanning Speed - Platen	See Note 3.	0	-5.0 to 5.0%
		6	Scanning Speed - DF		0	-5.0 to 5.0%
		7	Master Writing Speed	See Note 4.	0	-5.0 to 5.0%
		8	Master Writing Length	Do not use in the field.	0	-5.0 to 5.0%
		9	Master Main Scan Pos		0	-3.0 to 3.0 mm
		*10	Trail Edge Margin	Adjust the trail edge margin	0	0 to 2mm
6-2	Master Making Density	1	Master Making Density	See Note 5.	1	0 to 2
		*2	Master Making Density - Letter/Photo		2	0 to 2
6-3	Drum Master Clamp	1	Drum Master Clamp Regist	See Note 6.	0	-10 to 10 mm
6-4	SN Voltages/ Thresholds	1	Master Eject Sensor	The use of these SP modes is explained in various parts of the Replacement and Adjustment section.	2.5	1.5 to 3.0 V
		2	Drum Master 1 Sensor		2.5	1.5 to 3.0 V
		3	Drum Master 2 Sensor		2.5	1.5 to 3.0 V
		4	Master End Sensor		0.8	0.1 to 3.0 V
		5	Paper Exit Sensor		2.0	1.5 to 3.0 V
		6	Master Edge Sensor		2.0	1.5 to 3.0 V
6-5	Sensor Board Unit	1	SBU Auto Calibration	Refer to the Replacements and Adjustments section.	-	-
		2	SBU Gain Setting-EVEN	Do not adjust.	-	0 to 255
		3	SBU Gain Setting-ODD		-	0 to 255
		4	SBU DC Count Setting-EVEN		-	0 to 255
		5	SBU DC Count Setting-ODD		-	0 to 255

No.	Display	No.	Menu	Function	De-fault	Setting
6-5	Sensor Board Unit	6	SBU Reference Value	Do not adjust.	-	0 to 255
		7	SBU Offset Value-EVEN		-	0 to 255
		8	SBU Offset Value-ODD		-	0 to 255
6-6	MTF Filters	1	Letter Mode-Main Scan	See Note 7.	2	0 to 7
		2	Letter Mode-Sub Scan		1	0 to 7
		3	LetterPhoto Mode-Main Scan		0	0 to 7
		4	Letter/Photo Mode-Sub Scan		0	0 to 7
		5	Photo Mode-Main Scan		4	0 to 7
		6	Photo Mode-Sub Scan		4	0 to 7
		7	Pencil Mode-Main Scan		2	0 to 7
		8	Pencil Mode-Sub Scan		1	0 to 7
		9	Tint Mode-Main Scan		4	0 to 7
		10	Tint Mode-Sub Scan		4	0 to 7
*6-7	Drum Master Length	1	A3 Drum	Adjust the Drum Master Length When the original has a solid area at the trailing edge, increasing this value prevents master crinkling. However, if the drum is placed in a C593 unit, the crinkling may occur because the printing mechanism is different.	0	0 to 5
		2	DLT Drum		0	0 to 5
		3	A4 Drum		0	0 to 5
6-9	Paper Feed Pressure	1	FeedPressure Std Nor Ppr	See Note 8.	3	0 to 6
		2	Freq - Normal Paper		5	0 to 6
		3	V Freq - Normal Paper		6	0 to 6
		4	FeedPressure Std Thick		3	0 to 6
		5	Freq - Thick Paper		5	0 to 6
		6	V Freq - Thick Paper		6	0 to 6
		7	Feed Pressure Std Thin		1	0 to 6
		8	Freq - Thin Paper		3	0 to 6
		9	V Freq - Thin Paper		5	0 to 6

No.	Display	No.	Menu	Function	De-fault	Setting
6-9	Paper Feed Pressure	10	FeedPressure Std Special	See Note 8.	1	0 to 6
		11	Freq - Special Paper		3	0 to 6
		12	V Freq - Special Paper		5	0 to 6
		13	Feed Pressure Std User 1		5	0 to 6
		14	Freq - User 1 Paper		6	0 to 6
		15	V Freq - User 1 Paper		6	0 to 6
		16	Feed Pressure Std User 2		5	0 to 6
		17	Freq - User 2 Paper		6	0 to 6
		18	V Freq - User 2 Paper		6	0 to 6
6-10	Separation Pressure	1	SepPressure Std Nor Ppr	See Note 8.	4	0 to 6
		2	Freq - Normal Paper		5	0 to 6
		3	V Freq - Normal Paper		6	0 to 6
		4	SepPressure Std Thick		2	0 to 6
		5	Freq - Thick Paper		4	0 to 6
		6	V Freq - Thick Paper		6	0 to 6
		7	Sep Pressure Std Thin		4	0 to 6
		8	Freq - Thin Paper		5	0 to 6
		9	V Freq - Thin Paper		6	0 to 6
		10	SepPressure Std Special		1	0 to 6
		*11	Freq - Special Paper		2	0 to 6
		*12	V Freq - Special Paper		3	0 to 6
		13	SepPressure Std User 1		2	0 to 6
		14	Freq - User 1 Paper		4	0 to 6
		15	V Freq - User 1 Paper		6	0 to 6
		16	SepPressure Std User 2		2	0 to 6
		17	Freq - User 2 Paper		4	0 to 6
		18	V Freq - User 2 Paper	See Note 8.	6	0 to 6

No.	Display	No.	Menu	Function	Default	Setting
6-11	Friction Pad	1	Normal Paper	See Note 9.	Normal	Normal/ Special
		2	Thick Paper		Special	Normal/ Special
		3	Thin Paper		Special	Normal/ Special
		4	Special Paper		Special	Normal/ Special
		5	User1 Paper		Normal	Normal/ Special
		6	User2 Paper		Normal	Normal/ Special
6-12	Paper Clamping	1	Normal Paper	See Note 10.	Enable	Enable/OFF
		2	Thick Paper		Enable	Enable/OFF
		3	Thin Paper		Enable	Enable/OFF
		4	Special Paper		Enable	Enable/OFF
		5	User1 Paper		Enable	Enable/OFF
		6	User2 Paper		Enable	Enable/OFF
6-13	Delivery Wing Angle	1	Normal Paper	See Note 11.	High	High/Low
		2	Thick Paper		Low	High/Low
		3	Thin Paper		High	High/Low
		4	Special Paper		Low	High/Low
		5	User1 Paper		High	High/Low
		*6	User2 Paper		High	High/Low
6-14	Paper Feed Delay	1	16 rpm	Do not adjust. (Changes the feed motor on timing after the feed start timing sensor is activated.)	199	0 to 255
		2	20 rpm		200	0 to 255
		3	30 rpm		200	0 to 255
		4	60 rpm		219	0 to 255
		5	75 rpm		147	0 to 255
		6	90 rpm		100	0 to 255
		7	105 rpm		53	0 to 255
		8	120 rpm		26	0 to 255
6-15	Paper Feed Delay-Thick	1	16 rpm	Do not adjust. (Changes the feed motor on timing in thick and special paper modes after the feed start timing sensor is activated.)	199	0 to 255
		2	20 rpm		200	0 to 255
		3	30 rpm		200	0 to 255
		4	60 rpm		219	0 to 255
		5	75 rpm		147	0 to 255
		6	90 rpm		100	0 to 255

No.	Display	No.	Menu	Function	De-fault	Setting
6-15	Paper Feed Delay-Thick	7	105 rpm	Do not adjust. (Changes the feed motor on timing in thick and special paper modes after the feed start timing sensor is activated.)	53	0 to 255
		8	120 rpm		26	0 to 255
6-16	Regist Delay	*1	16 rpm	Do not adjust. (Changes the registration motor on timing after the feed start timing sensor is activated.)	36	0 to 255
		2	20 rpm		35	0 to 255
		3	30 rpm		35	0 to 255
		*4	60 rpm		33	0 to 255
		5	75 rpm		30	0 to 255
		6	90 rpm		26	0 to 255
		7	105 rpm		21	0 to 255
		8	120 rpm		15	0 to 255
6-17	Regist Delay - Thick	1	16 rpm	Do not adjust. (Changes the registration motor on timing in thick paper mode after the feed start timing sensor is activated.)	35	0 to 255
		2	20 rpm		35	0 to 255
		3	30 rpm		35	0 to 255
		*4	60 rpm		34	0 to 255
		5	75 rpm		31	0 to 255
		6	90 rpm		27	0 to 255
		7	105 rpm		22	0 to 255
		8	120 rpm		16	0 to 255
6-18	Regist Delay - Special	1	16 rpm	Do not adjust. (Changes the registration motor on timing in special paper mode after the feed start timing sensor is activated.)	35	0 to 255
		2	20 rpm		35	0 to 255
		3	30 rpm		35	0 to 255
		*4	60 rpm		34	0 to 255
		5	75 rpm		31	0 to 255
		6	90 rpm		27	0 to 255
		7	105 rpm		22	0 to 255
		8	120 rpm		16	0 to 255
6-19	A4 Regist Delay	*1	16 rpm	Do not adjust. (Changes the registration motor on timing in the use of the A4 drum after the feed start timing sensor is activated.)	36	0 to 255
		2	20 rpm		35	0 to 255
		3	30 rpm		35	0 to 255
		*4	60 rpm		33	0 to 255
		5	75 rpm		30	0 to 255
		6	90 rpm		25	0 to 255
		7	105 rpm		20	0 to 255
		*8	120 rpm		15	0 to 255
6-20	A4 Regist Delay - Thick	1	16 rpm	Do not adjust. (Changes the registration motor on timing in thick paper mode in combination with the use of the A4 drum after the feed start timing sensor is activated.)	35	0 to 255
		2	20 rpm		35	0 to 255
		3	30 rpm		35	0 to 255
		*4	60 rpm		34	0 to 255
		5	75 rpm		31	0 to 255
		6	90 rpm		26	0 to 255
		7	105 rpm		21	0 to 255
		8	120 rpm		14	0 to 255

Service Tables

No.	Display	No.	Menu	Function	De-fault	Setting
6-21	Skip Regist Delay	*1	16 rpm	Do not adjust. (Changes the registration motor on timing (when using the skip feed mode) after the feed start sensor is activated.)	36	0 to 255
		2	20 rpm		35	0 to 255
		3	30 rpm		35	0 to 255
		*4	60 rpm		33	0 to 255
		5	75 rpm		30	0 to 255
		6	90 rpm		25	0 to 255
		7	105 rpm		21	0 to 255
		8	120 rpm		14	0 to 255
6-22	A4 Skip Regist Delay	*1	16 rpm	Do not adjust. (Changes the registration motor on timing in the use of the A4 drum after the feed start timing sensor is activated.)	36	0 to 255
		2	20 rpm		35	0 to 255
		3	30 rpm		35	0 to 255
		*4	60 rpm		33	0 to 255
		5	75 rpm		30	0 to 255
		6	90 rpm		25	0 to 255
		7	105 rpm		20	0 to 255
		8	120 rpm		14	0 to 255
6-23	Paper Clamp Timing	1	Paper Clamp Timing Pulse	See Replacements and Adjustments – Paper Feed Length Adjustment for how to use.	197	0 to 255
		2	Paper Clamp-Thick Paper		200	0 to 255
		3	Paper Clamp - A4 Cam	Do not adjust.	197	0 to 255
		4	Feed Timing Pulse	Do not adjust.	163	0 to 255
		5	Feed Stop Timing Pulse	See Replacements and Adjustments – Paper Feed Length Adjustment for how to use.	25	0 to 255
		6	Print Position2 Setting	Do not adjust.	103	0 to 255
		7	Print Position1 Setting	Do not adjust.	140	0 to 255
6-24	PaperClampTiming - Special	1	Paper Clamp Timing Pulse	See Replacements and Adjustments – Paper Feed Length Adjustment for how to use.	197	0 to 255
		2	Thick Paper		200	0 to 255
		3	A4 Cam	Do not adjust.	197	0 to 255
6-25	Paper Clamp Timing-User1	1	Paper Clamp Timing Pulse	See Replacements and Adjustments – Paper Feed Length Adjustment for how to use.	197	0 to 255
		2	Feed Stop Timing Pulse		200	0 to 255
		3	A4 Cam	Do not adjust.	197	0 to 255
		4	Paper Feed Station		25	0 to 255
6-26	Paper Clamp Timing-User2	1	Paper Clamp Timing Pulse	See Replacements and Adjustments – Paper Feed Length Adjustment for how to use.	197	0 to 255
		2	Feed Stop Timing Pulse		200	0 to 255
		3	A4 Cam	Do not adjust.	197	0 to 255
		4	Paper Feed Station		25	0 to 255

No.	Display	No.	Menu	Function	De-fault	Setting
6-27	Regist Roller Speed	1	Standard	See Note 12.	High	High/Low
		2	Thick		Low	High/Low
		3	Thin		High	High/Low
		4	Special		Low	High/Low
		5	User 1		High	High/Low
		6	User 2		High	High/Low
6-40	JS Sorter	1	Move Jogger - Sideways	For details, refer to the sorter service manual.	0	-10 to 10 (-5.0 to +5.0 in 0.5 mm steps)
		2	Move Jogger - Lengthwise		0	Ditto
		3	Feed Speed 1st		0	50 to 100 rpm
		4	Feed Speed 2nd		0	50 to 100 rpm
		5	Feed Speed 3rd		0	50 to 100 rpm
		6	Feed Speed 4th		0	50 to 100 rpm
		7	Feed Speed 5th		0	50 to 100 rpm
		8	Timing Delay A3		0	-10 to 10 (-5.0 to +5.0 in 0.5 mm steps)
		9	Timing Delay B4 Sideways		0	Ditto
		10	Timing Delay A4 Sideways		0	Ditto
		11	Timing Delay A4 Lengthwise		0	Ditto
		12	Timing Delay B5 Sideways		0	Ditto
		13	Timing Delay DLT Sideways		0	Ditto
		14	Timing Delay LG Sideways		0	Ditto
		15	Timing Delay LT Sideways		0	Ditto
		16	Timing Delay LT Lengthwise		0	Ditto
		17	Timing Delay F Sideways		0	Ditto

NOTE: For model #C239

No.	Display	No.	Menu	De-fault	Setting
6-1	Scan&Writing	1	Main Scan Pos. - Platen	0	-5.0 to 2.0 mm
		2	Main Scan Position - DF	0	-5.0 to 5.0 mm
		3	Scan Start Pos. - Platen	0	-2.0 to 5.0 mm
		4	Scan Start Position - DF	0	-5.0 to 5.0 mm
		5	Scanning Speed - Platen	0	-5.0 to 5.0%
		6	Scanning Speed - DF	0	-5.0 to 5.0%
		7	Master Writing Speed	0	-5.0 to 5.0%
		8	Master Writing Length	0	-5.0 to 5.0%
		9	Master Main Scan Pos	0	-3.0 to 3.0 mm
		10	Trail Edge Margin	0	0 to 2mm
6-2	Master Making Density	1	Master Making Density	1	0 to 2
		2	Master Making Density - Letter/Photo	2	0 to 2
6-3	Drum Master Clamp	1	Drum Master Clamp Regist	0	-10 to 10 mm
6-4	SN Voltages/ Thresholds	1	Master Eject Sensor	2.5	1.5 to 3.0 V
		2	Drum Master 1 Sensor	2.5	1.5 to 3.0 V
		3	Drum Master 2 Sensor	2.5	1.5 to 3.0 V
		4	Master End Sensor	0.8	0.1 to 3.0 V
		5	Paper Exit Sensor	2.0	1.5 to 3.0 V
		6	Master Edge Sensor	2.0	1.5 to 3.0 V
6-5	Sensor Board Unit	1	SBU Auto Calibration	-	-
		2	SBU Gain Setting-EVEN	-	0 to 255
		3	SBU Gain Setting-ODD	-	0 to 255
		4	SBU DC Count Setting-EVEN	-	0 to 255
		5	SBU DC Count Setting-ODD	-	0 to 255

No.	Display	No.	Menu	De-fault	Setting
6-5	Sensor Board Unit	6	SBU Reference Value	-	0 to 255
		7	SBU Offset Value-EVEN	-	0 to 255
		8	SBU Offset Value-ODD	-	0 to 255
6-6	MTF Filters	*1	Letter Mode-Main Scan	1	0 to 7
		2	Letter Mode-Sub Scan	1	0 to 7
		*3	LtrPht-Min Scan (Ltr Priority)	4	0 to 7
		*4	LtrPht-SbMin Scan (Ltr Priority)	2	0 to 7
		*5	LtrPht-Min Scan (Ph Priority)	3	0 to 7
		*6	LtrPht-SbMin Scan (Ph Priority)	2	0 to 7
		*7	Photo Mode-Main Scan	0	0 to 7
		*8	Photo Mode-Sub Scan	0	0 to 7
		*9	Pencil Mode-Main Scan	1	0 to 7
		*10	Pencil Mode-Sub Scan	1	0 to 7
		*11	Tint Mode-Main Scan	0	0 to 7
		*12	Tint Mode-Sub Scan	0	0 to 7
6-7	Drum Master Length	1	A3 Drum	0	0 to 5
		2	DLT Drum	0	0 to 5
		3	A4 Drum	0	0 to 5
6-9	Paper Feed Pressure	1	FeedPressure Std Nor Ppr	3	0 to 6
		2	Freq - Normal Paper	5	0 to 6
		3	V Freq - Normal Paper	6	0 to 6
		4	FeedPressure Std Thick	3	0 to 6
		5	Freq - Thick Paper	5	0 to 6
		6	V Freq - Thick Paper	6	0 to 6
		7	Feed Pressure Std Thin	1	0 to 6
		8	Freq - Thin Paper	3	0 to 6
		9	V Freq - Thin Paper	5	0 to 6
		10	FeedPressure Std Special	1	0 to 6

No.	Display	No.	Menu	De-fault	Setting
6-9	Paper Feed Pressure	11	Freq - Special Paper	3	0 to 6
		12	V Freq - Special Paper	5	0 to 6
		13	Feed Pressure Std User 1	5	0 to 6
		14	Freq - User 1 Paper	6	0 to 6
		15	V Freq - User 1 Paper	6	0 to 6
		16	Feed Pressure Std User 2	5	0 to 6
		17	Freq - User 2 Paper	6	0 to 6
		18	V Freq - User 2 Paper	6	0 to 6
6-10	Separation Pressure	1	SepPressure Std Nor Ppr	4	0 to 6
		2	Freq - Normal Paper	5	0 to 6
		3	V Freq - Normal Paper	6	0 to 6
		4	SepPressure Std Thick	2	0 to 6
		5	Freq - Thick Paper	4	0 to 6
		6	V Freq - Thick Paper	6	0 to 6
		7	Sep Pressure Std Thin	4	0 to 6
		8	Freq - Thin Paper	5	0 to 6
		9	V Freq - Thin Paper	6	0 to 6
		10	SepPressure Std Special	1	0 to 6
		11	Freq - Special Paper	2	0 to 6
		12	V Freq - Special Paper	3	0 to 6
		13	SepPressure Std User 1	2	0 to 6
		14	Freq - User 1 Paper	4	0 to 6
		15	V Freq - User 1 Paper	6	0 to 6
		16	SepPressure Std User 2	2	0 to 6
		17	Freq - User 2 Paper	4	0 to 6
		18	V Freq - User 2 Paper	6	0 to 6

No.	Display	No.	Menu	Default	Setting
6-11	Friction Pad	1	Normal Paper	Normal	Normal/ Special
		2	Thick Paper	Special	Normal/ Special
		3	Thin Paper	Special	Normal/ Special
		4	Special Paper	Special	Normal/ Special
		5	User1 Paper	Normal	Normal/ Special
		6	User2 Paper	Normal	Normal/ Special
6-12	Paper Clamping	1	Normal Paper	Enable	Enable/OFF
		2	Thick Paper	Enable	Enable/OFF
		3	Thin Paper	Enable	Enable/OFF
		4	Special Paper	Enable	Enable/OFF
		5	User1 Paper	Enable	Enable/OFF
		6	User2 Paper	Enable	Enable/OFF
6-13	Delivery Wing Angle	1	Normal Paper	High	High/Low
		2	Thick Paper	Low	High/Low
		3	Thin Paper	High	High/Low
		4	Special Paper	Low	High/Low
		5	User1 Paper	High	High/Low
		6	User2 Paper	High	High/Low
6-14	Paper Feed Delay	1	16 rpm	199	0 to 255
		2	20 rpm	200	0 to 255
		3	30 rpm	200	0 to 255
		4	60 rpm	219	0 to 255
		5	75 rpm	147	0 to 255
		6	90 rpm	100	0 to 255
		7	105 rpm	53	0 to 255
		8	120 rpm	26	0 to 255
6-15	Paper Feed Delay-Thick	1	16 rpm	199	0 to 255
		2	20 rpm	200	0 to 255
		3	30 rpm	200	0 to 255
		4	60 rpm	219	0 to 255
		5	75 rpm	147	0 to 255
		6	90 rpm	100	0 to 255
		7	105 rpm	53	0 to 255
		8	120 rpm	26	0 to 255

No.	Display	No.	Menu	De-fault	Setting
6-16	Regist Delay	*1	16 rpm	37	0 to 255
		2	20 rpm	35	0 to 255
		*3	30 rpm	37	0 to 255
		*4	60 rpm	32	0 to 255
		5	75 rpm	30	0 to 255
		6	90 rpm	26	0 to 255
		7	105 rpm	21	0 to 255
		*8	120 rpm	16	0 to 255
6-17	Regist Delay - Thick	1	16 rpm	35	0 to 255
		2	20 rpm	35	0 to 255
		3	30 rpm	35	0 to 255
		*4	60 rpm	33	0 to 255
		5	75 rpm	31	0 to 255
		6	90 rpm	27	0 to 255
		7	105 rpm	22	0 to 255
		8	120 rpm	16	0 to 255
6-18	Regist Delay - Special	1	16 rpm	35	0 to 255
		2	20 rpm	35	0 to 255
		3	30 rpm	35	0 to 255
		*4	60 rpm	33	0 to 255
		5	75 rpm	31	0 to 255
		6	90 rpm	27	0 to 255
		7	105 rpm	22	0 to 255
		8	120 rpm	16	0 to 255
6-19	A4 Regist Delay	*1	16 rpm	37	0 to 255
		2	20 rpm	35	0 to 255
		*3	30 rpm	37	0 to 255
		*4	60 rpm	32	0 to 255
		5	75 rpm	30	0 to 255
		*6	90 rpm	26	0 to 255
		*7	105 rpm	21	0 to 255
		*8	120 rpm	15	0 to 255
6-20	A4 Regist Delay - Thick	1	16 rpm	35	0 to 255
		2	20 rpm	35	0 to 255
		3	30 rpm	35	0 to 255
		*4	60 rpm	33	0 to 255
		5	75 rpm	31	0 to 255
		6	90 rpm	26	0 to 255
		7	105 rpm	21	0 to 255
		8	120 rpm	14	0 to 255
6-21	Skip Regist Delay	1	16 rpm	36	0 to 255
		2	20 rpm	35	0 to 255
		*3	30 rpm	36	0 to 255
		*4	60 rpm	32	0 to 255
		5	75 rpm	30	0 to 255
		*6	90 rpm	26	0 to 255

No.	Display	No.	Menu	De-fault	Setting
6-21	Skip Regist Delay	7	105 rpm	21	0 to 255
		*8	120 rpm	15	0 to 255
6-22	A4 Skip Regist Delay	1	16 rpm	36	0 to 255
		2	20 rpm	35	0 to 255
		*3	30 rpm	36	0 to 255
		*4	60 rpm	32	0 to 255
		5	75 rpm	30	0 to 255
		*6	90 rpm	26	0 to 255
		*7	105 rpm	21	0 to 255
		*8	120 rpm	15	0 to 255
6-23	Paper Clamp Timing	1	Paper Clamp Timing Pulse	197	0 to 255
		*2	Paper Clamp-Thick Paper	203	0 to 255
		3	Paper Clamp - A4 Cam	197	0 to 255
		4	Feed Timing Pulse	163	0 to 255
		5	Feed Stop Timing Pulse	25	0 to 255
		6	Print Position2 Setting	103	0 to 255
		7	Print Position1 Setting	140	0 to 255
6-24	PaperClam pTiming - Special	1	Paper Clamp Timing Pulse	197	0 to 255
		2	Thick Paper	200	0 to 255
		3	A4 Cam	197	0 to 255
6-25	Paper Clamp Timing-User1	1	Paper Clamp Timing Pulse	197	0 to 255
		*2	Feed Stop Timing Pulse	203	0 to 255
		3	A4 Cam	197	0 to 255
		4	Paper Feed Station	25	0 to 255
6-26	Paper Clamp Timing-User2	1	Paper Clamp Timing Pulse	197	0 to 255
		*2	Feed Stop Timing Pulse	203	0 to 255
		3	A4 Cam	197	0 to 255
		4	Paper Feed Station	25	0 to 255
6-27	Regist Roller Speed	1	Standard	High	High/Low
		2	Thick	Low	High/Low
		3	Thin	High	High/Low
		4	Special	Low	High/Low
		5	User 1	High	High/Low
		6	User 2	High	High/Low

Service Tables

No.	Display	No.	Menu	De-fault	Setting
6-40	JS Sorter	1	Move Jogger - Sideways	0	-10 to 10 (-5.0 to +5.0 in 0.5 mm steps)
		2	Move Jogger - Lengthwise	0	Ditto
		3	Feed Speed 1st	0	50 to 100 rpm
		4	Feed Speed 2nd	0	50 to 100 rpm
		5	Feed Speed 3rd	0	50 to 100 rpm
		6	Feed Speed 4th	0	50 to 100 rpm
		7	Feed Speed 5th	0	50 to 100 rpm
		8	Timing Delay A3	0	-10 to 10 (-5.0 to +5.0 in 0.5 mm steps)
		9	Timing Delay B4 Sideways	0	Ditto
		10	Timing Delay A4 Sideways	0	Ditto
		11	Timing Delay A4 Lengthwise	0	Ditto
		12	Timing Delay B5 Sideways	0	Ditto
		13	Timing Delay DLT Sideways	0	Ditto
		14	Timing Delay LG Sideways	0	Ditto
		15	Timing Delay LT Sideways	0	Ditto
		16	Timing Delay LT Lengthwise	0	Ditto
		17	Timing Delay F Sideways	0	Ditto

Notes

1: 6-1-1 and –2 (Main scan position)

Inputting a positive number moves the image away from the operation panel side of the machine. Use the point (**.**) key to switch between + and –.

2: 6-1-3 and –4 (Scan start position)

Inputting a positive number moves the image away from the leading edge of the printer paper. Use the point (.) key to switch between + and –.

3: 6-1-5 and -6 (Scanning speed)

Inputting a positive value stretches the image on the master. Inputting a negative value shrinks it. Use the point (.) key to switch between + and –.

4: 6-1-7 (Master writing speed)

This changes the master feed motor speed.

Inputting a positive value stretches the image on the master. Inputting a negative value shrinks it. Use the point (.) key to switch between + and –.

Normally, do not use this SP mode to adjust the vertical magnification. Use it only if the vertical magnification is not satisfactory by adjusting Scanning Speed (SP6-1-5 and -6).

5: 6-2-1 (Master making density)

0: Pale, 1: Normal, 2: Dark

The default is 1: Normal. Changing this moves the user"s image density settings up or down one notch.

6: 6-3-1 (Drum master clamper registration)

This determines how far after the leading edge the master is clamped.

A larger value clamps the master further away from the leading edge, and moves the image closer to the leading edge of the paper.

Do not use this SP to adjust leading edge registration. Use SP6-1-3 and -4 for that.

7: 6-6 (MTF filters)

A stronger filter leads to a sharper image, but moiré can become more apparent.

Refer to the following table for the relationship between this SP mode value and filter strength (the relationship is not linear).

Value	Strength of Filter
7	x 4
6	x 2
0	x 1
5	x 1/2
4	x 1/4
3	x 1/8
2	x 1/16
1	x 1/32

8: 6-9 and -10 (Paper feed and separation pressures for different paper types)

These SP modes determine the paper feed and separation pressures that are automatically applied during paper feed. The user adjusts these pressures by selecting a paper type (normal, thick, thin, special, user 1, user 2), and then by selecting how often non-feeds and double feeds are occurring.

The user customizes the user 1 and user 2 types. These choices can be seen in the description for User Tools 4-19. Each of these choices has a set of feed and separation pressures (refer to Detailed Section Descriptions – Paper Feed).

6-9-1 to -3: Normal paper, feed pressure
6-9-4 to -6: Thick paper, feed pressure
6-9-7 to -9: Thin paper, feed pressure
6-9-10 to -12: Special paper, feed pressure
6-9-13 to -15: User 1 paper, feed pressure
6-9-16 to -18: User 2 paper, feed pressure
6-10-1 to -3: Normal paper, separation pressure
6-10-4 to -6: Thick paper, separation pressure
6-10-7 to -9: Thin paper, separation pressure
6-10-10 to -12: Special paper, separation pressure
6-10-13 to -15: User 1 paper, separation pressure
6-10-16 to -18: User 2 paper, separation pressure

The settings for user 1 and user 2 depend on the type of paper that the user has set these up for in User Tools 4-19.

9: 6-11 (Friction pad)

The machine switches the friction pads depending on the paper type selected by the user (standard, special, thick, user 1, user 2).

10: 6-12 (Paper clamping)

Whether the machine clamps the paper or not depends on the paper type selected by the user (standard, special, thick, user 1, user 2).

The settings for user 1 and user 2 depend on the type of paper that the user has set these up for in User Tools 4-19.

11: 6-13 (Paper delivery table wing angle)

The machine lifts or lowers the wings depending on the paper type selected by the user (standard, special, thick, user 1, user 2).

The settings for user 1 and user 2 depend on the type of paper that the user has set these up for in User Tools 4-19.

12: 6-27 (Regist roller speed)

For an accurate paper registration, the machine lowers the registration roller rotation speed depending on the paper type selected by the user (standard, special, thick, user 1, user 2). Usually, the “high” speed setting (3% higher than the low) results in the better registration. However, when thick paper is used, it should be lowered because thick paper strongly pushes the paper clamper. This causes a friction to the smooth rotation of the pressure cylinder due to a play in the cylinder”s drive transmission.

The settings for user 1 and user 2 depend on the type of paper that the user has set these up for in User Tools 4-19.

7. Memory Data Clear

SP No.	Display	No.	Menu
7-1	Memory Clear	1	Factory Settings
		2	User Custom Default
		3	User Program
		4	Make-up Pattern
		5	Reset Sales Mode Flags
7-2	Counter Clear	1	Total Print
		2	Jam/Error Logging
7-3	Code Clear	1	User Code
		2	Key Operator Code
7-4	Reset Paper Feed Systems	1	Feed Pressure
		2	Separation Pressure
		3	Friction Pad Settings
		4	Wing Guide Angle
		5	Feed Control Data
		6	Feed Control Pulse
7-5	Reset Image Adjustments	1	MTF Filter Settings
7-6	Reset Option Settings	1	JS Sorter Settings

Notes

1: 7-1-1 to -2 (Memory Clear)

See section 4.1.2 “Clearing the factory settings (SP7-1)”.

2: 7-1-5 (Reset Sales Mode Flags)

Do not use. Japanese version use only.

3: 7-4-5 (Feed Control Data)

The following are reset to the default settings with SP7-4-5.

- SP6-14 (Paper Feed Delay)
- SP6-15 (Paper Feed Delay-Thick)
- SP6-16 (Regist Delay)
- SP6-17 (Regist Delay-Thick)
- SP6-18 (Regist Delay-Special)
- SP6-19 (A4 Regist Delay)
- SP6-20 (A4 Regist Delay-Thick)
- SP6-21 (Skip Regist Delay)
- SP6-22 (A4 Skip Regist Delay)

4: 7-4-6 (Feed Control Pulse)

The following are reset to the default settings with SP7-4-6.

- SP6-23 (Paper Clamp Timing)
- SP6-24 (Paper Clamp Timing-Special)
- SP6-25 (Paper Clamp Tming-User1)
- SP6-26 (Paper Clamp Timing-User2)

8. System Test

SP No.	Display	No.	Menu	Setting
8-1	Data Printout	1	All Logging Data	-
		2	User Code Counters Only	-
		3	Jam Counters Only	-
		4	SC Counters Only	-
		5	Jams/Errors Details	-
		6	User's Items Only	-
		7	User Tools-Standard	-
		8	User Tools-Class	-
		9	Basic Settings Printout	-
		10	Input Test Item Printout	-
		11	Output Test Item Printout	-
		12	All System Adjustment	-
		13	Paper Feed Adjustments	-
		14	Option Adjustment Print	-
8-2	Download Program	1	Load Program	-
		2	Load Program - Program Data	-
		3	Load Program - Font Data	-
		4	Load Program - Except M orig	-
8-3	Upload Program	1	Upload Program	-
8-5	TH Test Patterns	1	TH Test Patterns	0: Grid 1: Vertical 2: Horiz grey 3: Vert grey 4: 16 greys 5: Cross 6: Diag grid 7: 256 greys 8: 64 greys
		2	Master Makeup Pattern	1 to 40
8-6	Free Run - Scanner/ADF	1	Scanner Free Run/Mag.	50 to 200%
		2	ADF Free Run/Mag.	50 to 200%
8-7	Other Tests	1	APS Sensor Check Mode	-
		2	Not used	-

Notes

1: 8-2-1 (Load Program)

This upgrades all the firmware using a flash memory card.

NOTE: This deletes all user data such as stored images.

2: 8-2-2 (Load Program-Program Data)

This upgrades the program area data in the firmware using a flash memory card.

3: 8-2-3 (Load Program-Font Data)

This upgrades the font data in the firmware using a flash memory card.

4: 8-2-4 (Load Program-Except M Orig)

This upgrades all data in the firmware except user area data using a flash memory card.

It is better to use this SP mode when upgrading the firmware.

See section “4.1.3 Load Program (SP8-2)”.

9. Printer Controller

SP No.	Display	No.	Menu	Default	Setting
9-1	Test Mode	1	HEX Dump Print	Disable	Disable/enable
		2	Service Summary 1 Print	-	-
		3	Service Summary 2 Print	-	-
		4	Parallel Loop-Back Test	-	-
		5	Self-diagnostic Mode	-	-
9-2	Clear Mode	1	Config data	-	-
		2	Controller NVRAM	-	-
		3	NIB NVRAM	-	-
9-3	Load Program	1	Load Program-System	-	-
		2	Load Program-NIB	-	-

NOTE: For details, refer to the C607 manual.

4.1.1 CLEARING THE FACTORY SETTINGS (SP7-1)

⚠CAUTION

Performing "Clear factory settings" (SP7-1) resets a part of the settings stored in the RAM to their default settings. Normally, this SP mode should not be used. This procedure is required only after replacing the RAM on the MPU or when the machine malfunctions due to a damaged RAM.

NOTE: 1) **The following are not reset or cleared even after doing "Clear factory settings" (SP7-1-1).**

- SP 2-4: All destination settings
- SP 3-1-1: Serial number
- SP 3-1-7: Date
- SP 6- All : All system adjustment settings
- User Tools 1-5: Select Language on LCD

2) **The following are reset to the default settings with "Clear user code counters only" (SP7-1-2).**

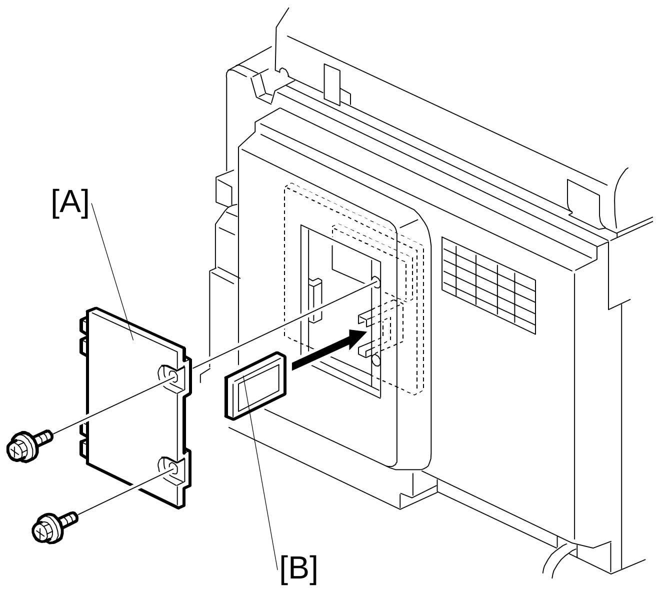
- SP 2-1: All default user settings
- User Tools 3-1: Paper type
- User Tools 3-2: Image density level
- User Tools 3-3: Original mode
- User Tools 3-8: Contrast level for Photo mode
- User Tools 3-9: Screen image for Photo mode
- User Tools 3-12: Magnification ratio
- User Tools 4-1: Auto cycle On/Off

1. Print lists of SP data in order to restore the settings later.
   NOTE: All system parameter lists can be printed using SP8-1.
2. Select an item from the SP7-1 menu.
3. Press the Enter (#) key while holding the “0” key.
   NOTE: When the sequence is successful, “**Cleared**” is displayed.

4.1.2 LOAD PROGRAM (SP8-2)

The firmware in the flash ROM on the MPU can be upgraded using a flash memory card, as follows.

NOTE: Using SP8-3, the current firmware in the MPU can be uploaded to a flash memory card.



C244S509.WMF

1. Before downloading new software, check the current version with SP1-19-7.
2. Turn off the main switch and disconnect the power plug.
3. Remove the cover [A].
4. Plug the flash memory card [B] into the connector on the MPU.
5. Connect the power plug and turn on the main switch.
6. Access SP8-2-4 and press the **OK** key. Press the **Enter (#)** key to start downloading (the LCD displays '**Processing**').
7. After completing the download (the LCD displays '**Completed**'), leave the SP mode.

   NOTE: It takes approximately 2.5 minutes to complete.
8. Turn off the main switch, and then remove the flash memory card.
9. Turn on the main switch, then enter the SP mode again and check the updated ROM version with SP1-19-7.

5. PREVENTIVE MAINTENANCE

NOTE: For models #C239 and #C244

5.1 MAINTENANCE TABLE

The following items should be maintained periodically. There are two sets of intervals - one based on time and the other based on print count. For maintenance items with entries in both of them, use whichever comes first.

C: Clean, R: Replace, L: Lubricate, A: Adjust

Interval / Item	Time				Print Counter					EM	NOTE
	6M	1Y	2Y	3Y	1M	1.2M	2.4M	3.6M	6M		
Scanner/Optics											
Exposure Lamp	C	C	C	C							Dry Cloth
Mirror/Reflector	C	C	C	C							Soft Cloth
Scanner Guide Rail	C	C	C	C							Dry Cloth
Platen Cover / White Plate	C	C	C	C							Damp Cloth
Exposure Glass	C	C	C	C							Dry Cloth
Master Feed											
Thermal Head										C	Alcohol
Platen Roller	C	C	C	R							Expected life is 30K masters.
Master Eject Rollers	C	C	C	C							Alcohol
Master Eject Box	C	C	C	C							Alcohol
1st and 2nd Drum Master Sensors										C	Dry Cloth
Paper Feed											
Paper Pick-up Roller	C	C	C	C		R	R	R			Damp Cloth
Paper Feed Roller	C	C	C	C		R	R	R			Damp Cloth
Paper Feed and Pick-up Roller One-way Clutches			C			R	R	R			
Friction Pads	C	C	C	C		R	R	R			Damp Cloth
Feed Roller and Transport Belt Roller Bushings		L	L	L							Motor Oil (SAE #20)
Feed Drive Gears		L	L	L							Grease (Alvania #2)
Paper End Sensor	C	C	C	C							Dry Cloth
Registration/Feed Timing/Exit Sensors	C	C	C	C							Dry Cloth
Registration Roller	C	C	C	C							Dry Cloth
Main Motor Gear									R		

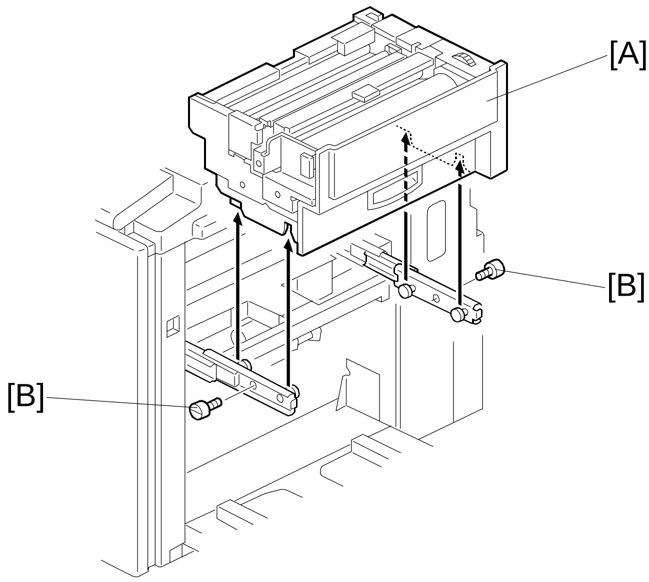
Interval / Item	Time				Print Counter					EM	NOTE
	6M	1Y	2Y	3Y	1M	1.2M	2.4M	3.6M	6M		
Drum and Ink Supply											
Cloth Screen						R	R	R			
Drum Drive Gears and Cam		L	L	L							Grease (Alvania #2)
Drum Flange Bushing		L	L	L							Motor Oil (SAE #20)
In/Outside of Drum	C	C	C	C							Alcohol
Ink Nozzle	C	C	C	C							Alcohol
Others											
Pressure Cylinder	C	C	C	C		C	C	C			Damp Cloth
Paper Clamper (on Pressure Cylinder)	C	C	C	C		R	R	R			Dry Cloth
Timing Belt Tension			A								
ADF (Option)											
DF Feed Rollers	C	C	C	C							Dry Cloth

6. REPLACEMENT AND ADJUSTMENT

6.1 MASTER FEED SECTION

6.1.1 MASTER MAKING UNIT REMOVAL

NOTE: For models #C244 and #C239

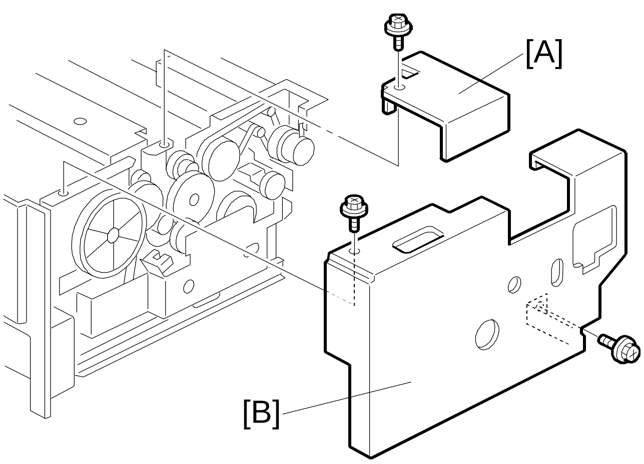


C244R903.WMF

First, slide out the master making unit [A].
Then, remove it (2 screws [B]).

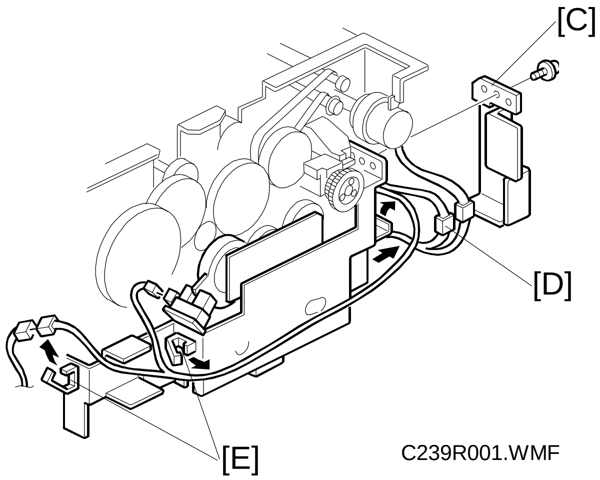
6.1.2 MASTER FEED CLUTCH REMOVAL

NOTE: For model #C239 only



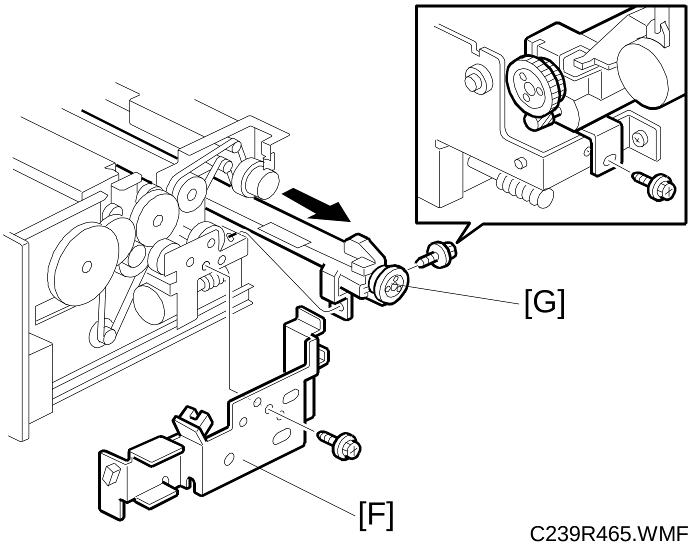
C239R441.WMF

[A]: Rear platen roller brackets
[B]: Rear cover



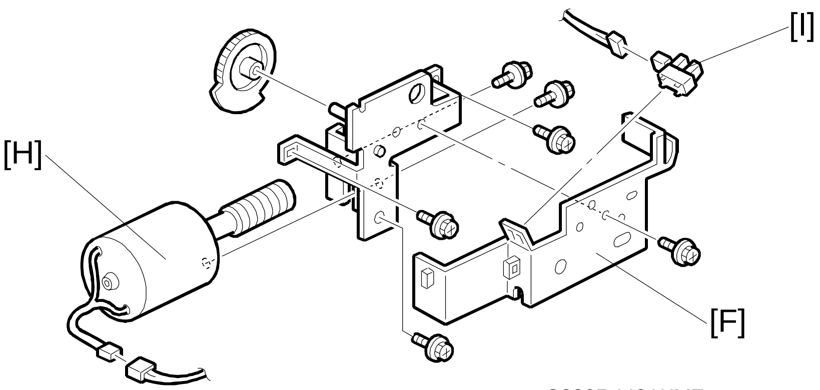
C239R001.WMF

[C]: Cable cover
Disconnect the connector [D] between the cutter unit and the cable.
Unhook the wire from the cable clamps [E].



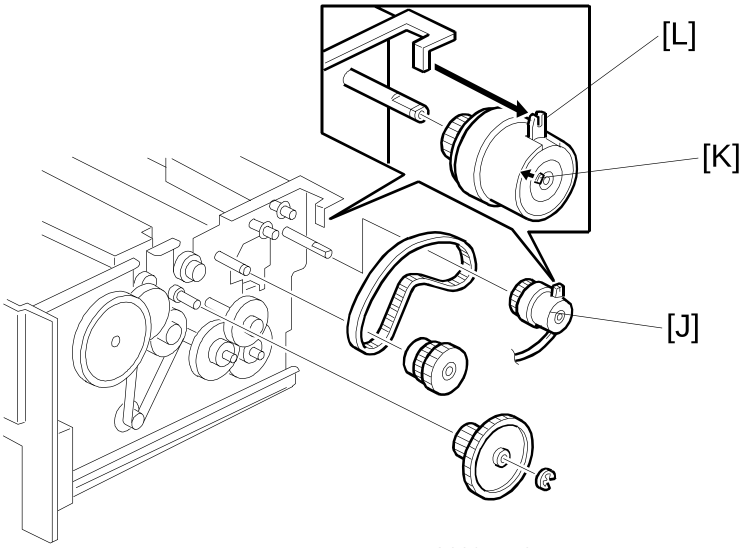
C239R465.WMF

[F]: Cover bracket
[G]: Cutter unit



C239R442.WMF

[H]: Platen release motor
[I]: Platen release sensor



C239R443.WMF

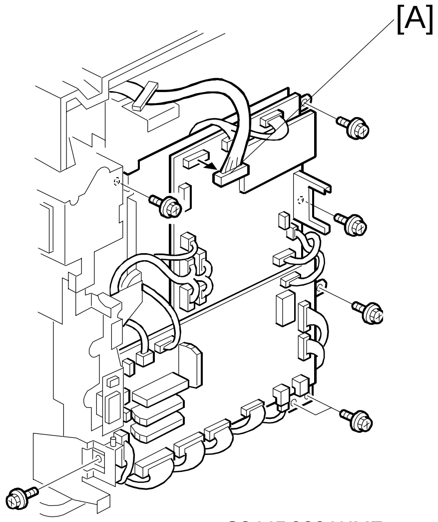
[J]: Master feed clutch

NOTE: 1) Push the pawl [K] out from the center to slide the clutch off the shaft.
2) At installation, make sure that the stopper [L] is positioned as shown.

6.1.3 DOUBLE FEED DETECTION BOARD

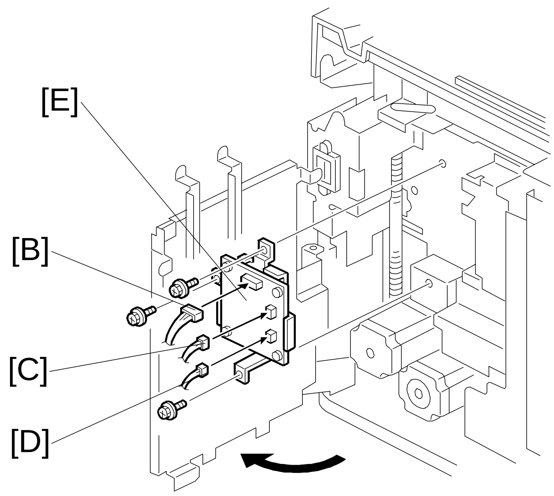
NOTE: For model #C244 only

First, remove the rear exterior cover.
[A]: A: SBU cable



C244R900.WMF

Then, remove 7 screws securing the MPU bracket and flip over the MPU.



C244R901.WMF

Disconnect the cables [B] [C] [D].

Remove the Double Feed Detection Board [E].

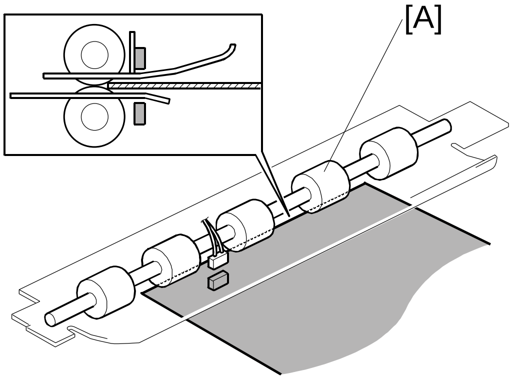
6.1.4 DOUBLE FEED SENSOR ADJUSTMENT

NOTE: For model #C244 only

Purpose: To ensure that the sensor detects paper double feeds.

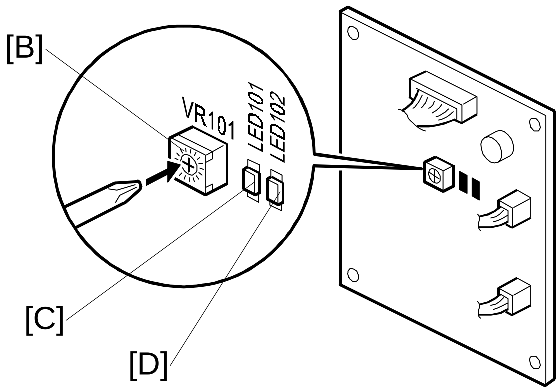
Procedure:

1. Turn on the main switch.



C244R904.WMF

2. Feed a sheet of the customer's typical print paper from the paper feed table into the machine until the leading edge runs against the feed roller [A].



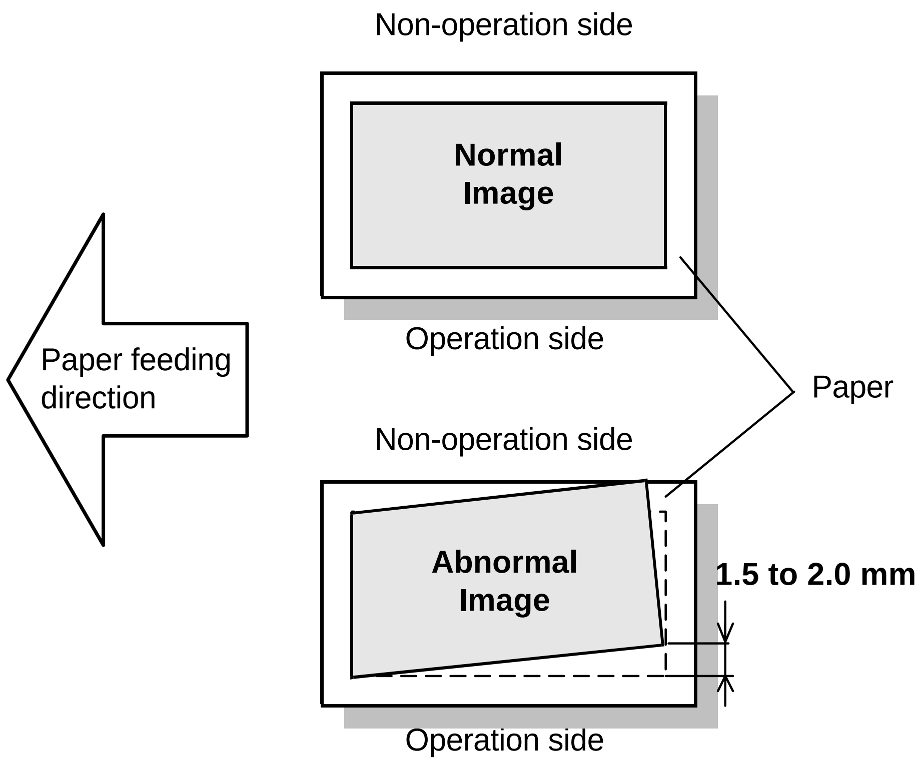
C244R902.WMF

3. Turn VR101 [B] clockwise until LED101 [C] on the double feed detection board lights.
4. Turn VR101 [B] counterclockwise until both LED101 [C] and LED102 [D] light up.
5. Turn VR101 [B] counterclockwise until LED102 [D] light off.

6.1.5 DRUM POSITION ADJUSTMENT

NOTE: For models #C244 and #C239 (this adjustment is the same as for C235)

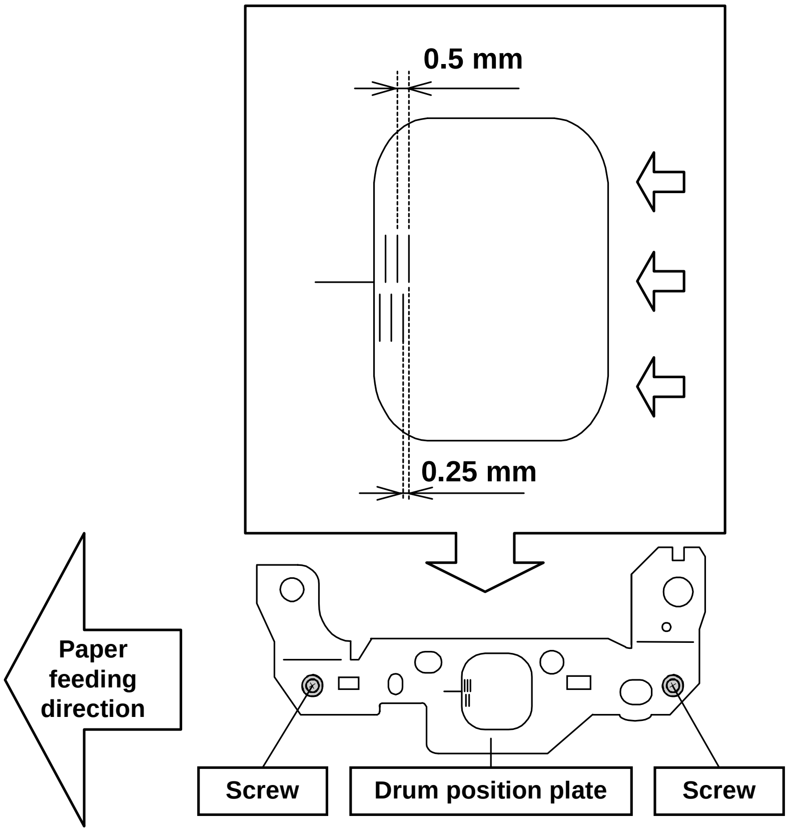
Purpose: To prevent the back edge of the master from coming 1.5 to 2.0mm closer on the non-operation side during printing, which causes the image to turn obliquely on the paper.



C244R906.WMF

Procedure:

1. Remove the drum.
2. Remove the Inner cover.



C244R905.WMF

3. Shift the drum position plate in the paper delivery direction (to the left), if the back edge of the master comes close to the non-operation side.

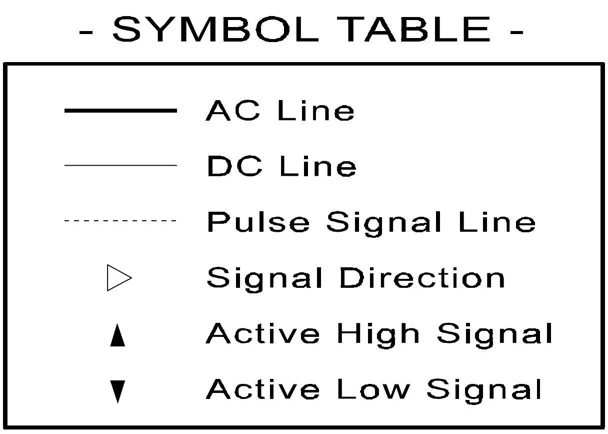
NOTE: 1) As a rough guide, if the edge has moved to the non-operation side 1.5 to 2.0mm, shift the drum position plate 0.25mm to the left.
2) Please check each machine after adjusting, because the effect differs with each machine. To do this, print about 1000 sheets and compare the 10th sheet with the 1000th sheet.

7. POINT TO POINT DIAGRAM

7.1 FOR MODEL #C244

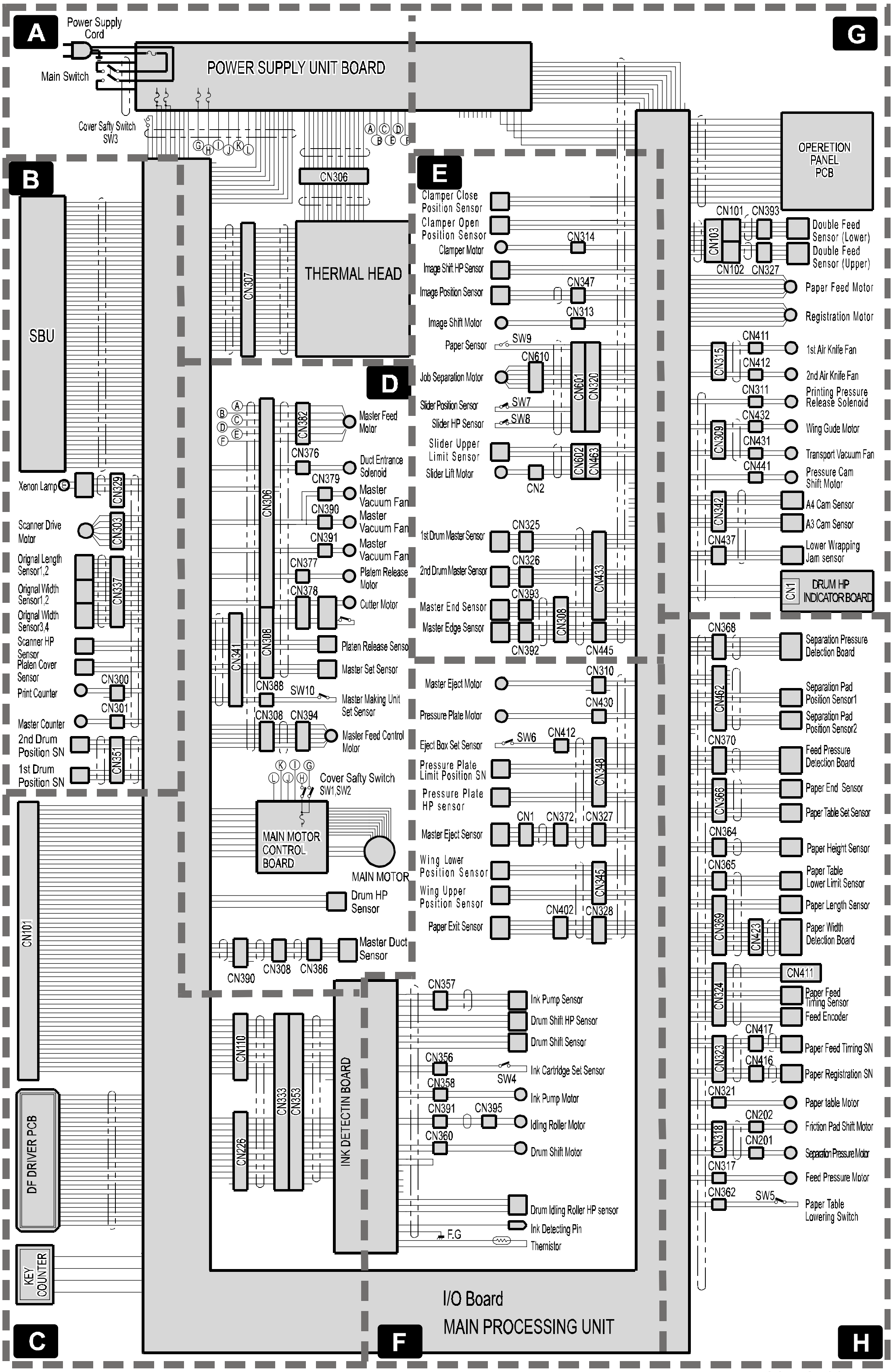
- Location Maps
- Section A
- Section B
- Section C
- Section D
- Section E
- Section F
- Section G
- Section H

NOTE: The symbols used in the diagrams are as follows:



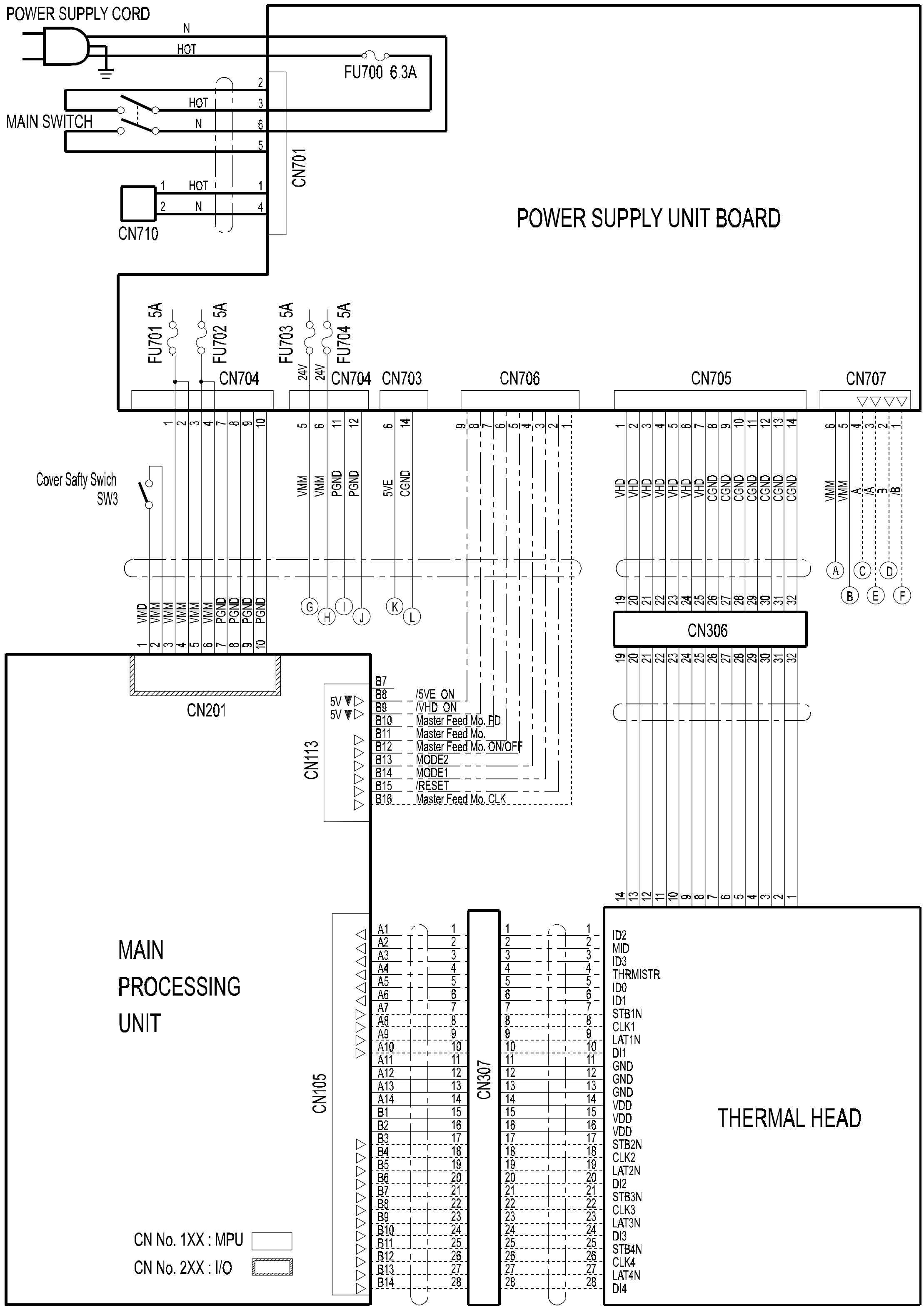
PP2.WMF

Location Map



C244S500.WMF

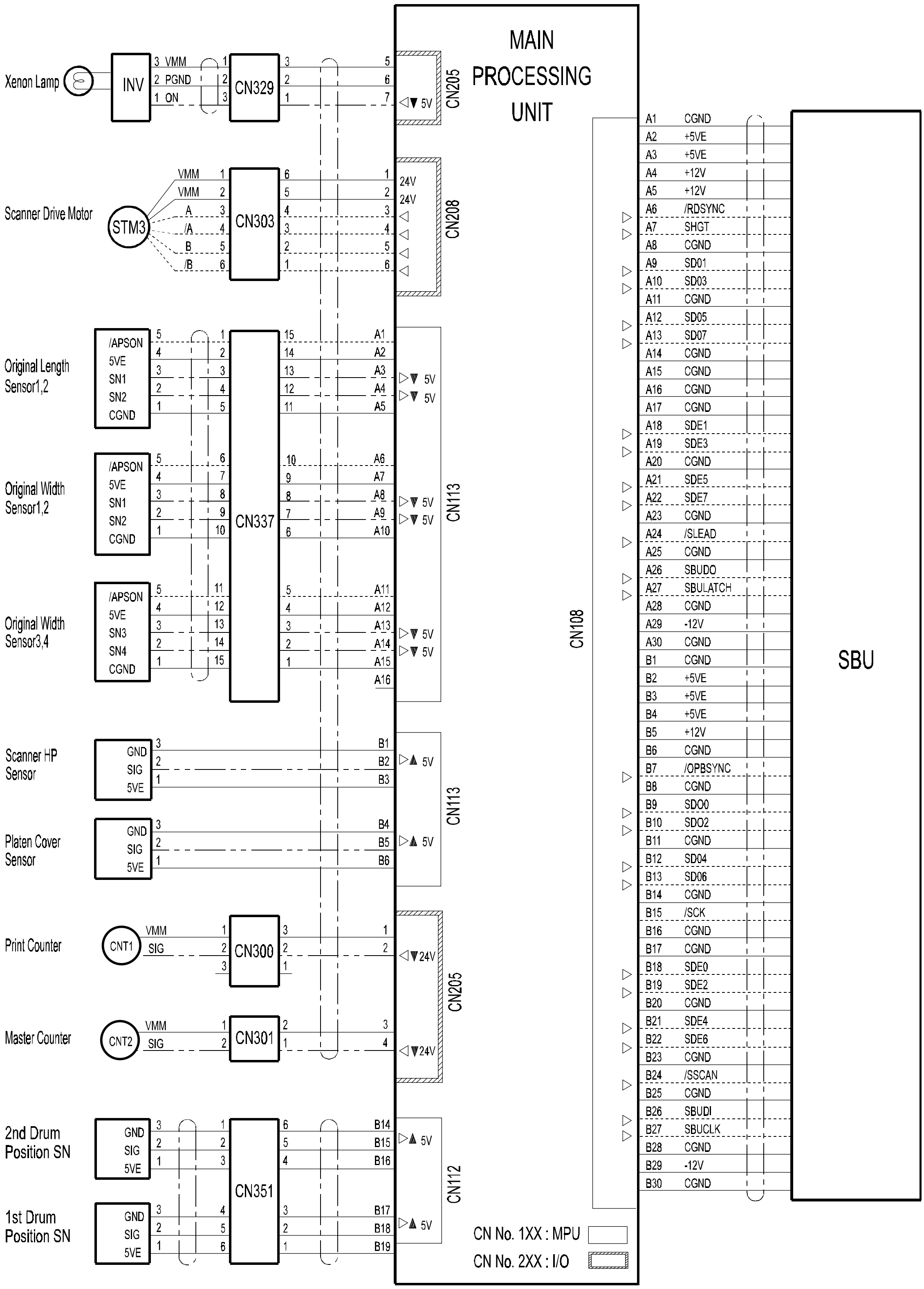
Section A



C244S501.WMF

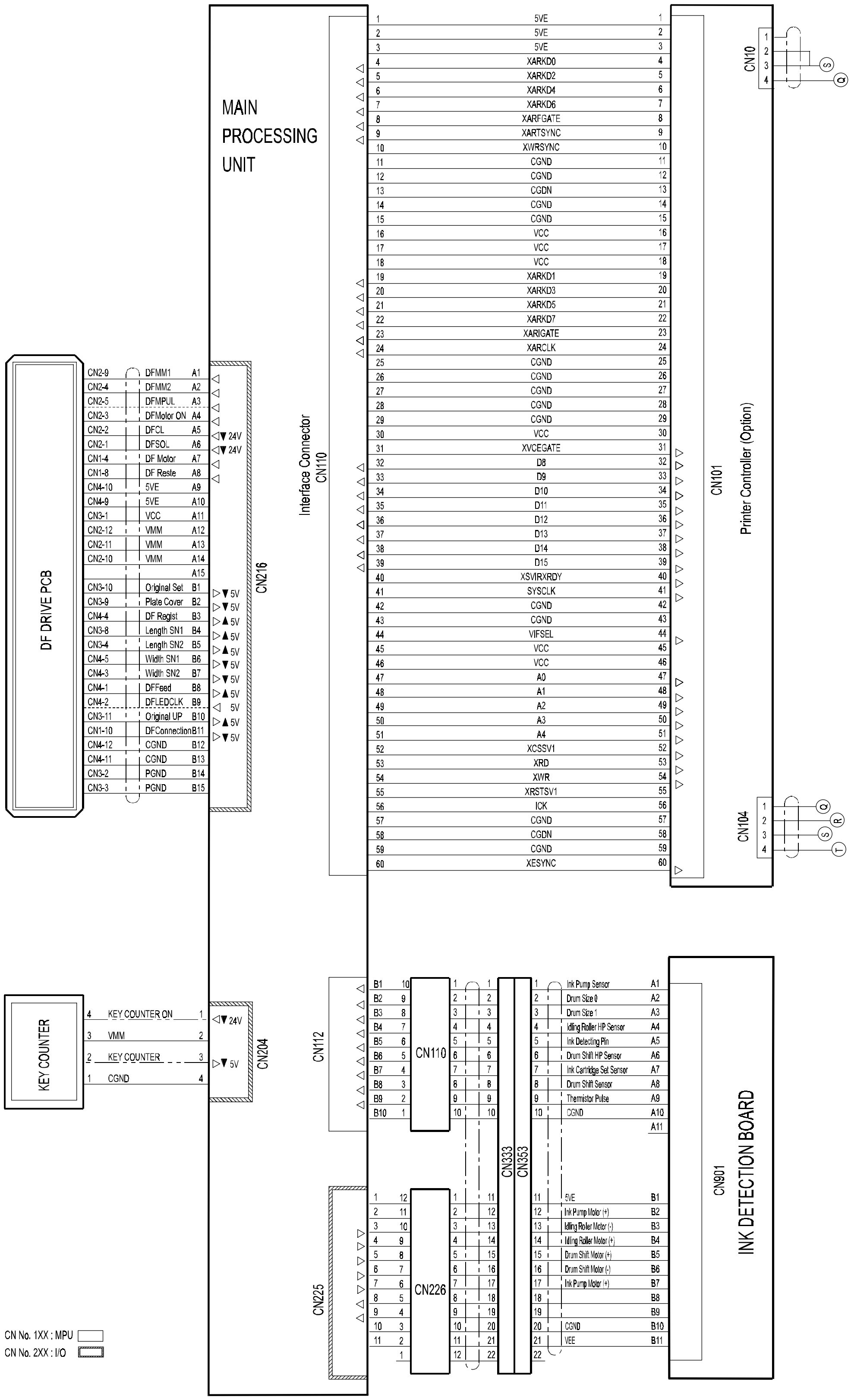
P-to-P

Section B



C244S502.WMF

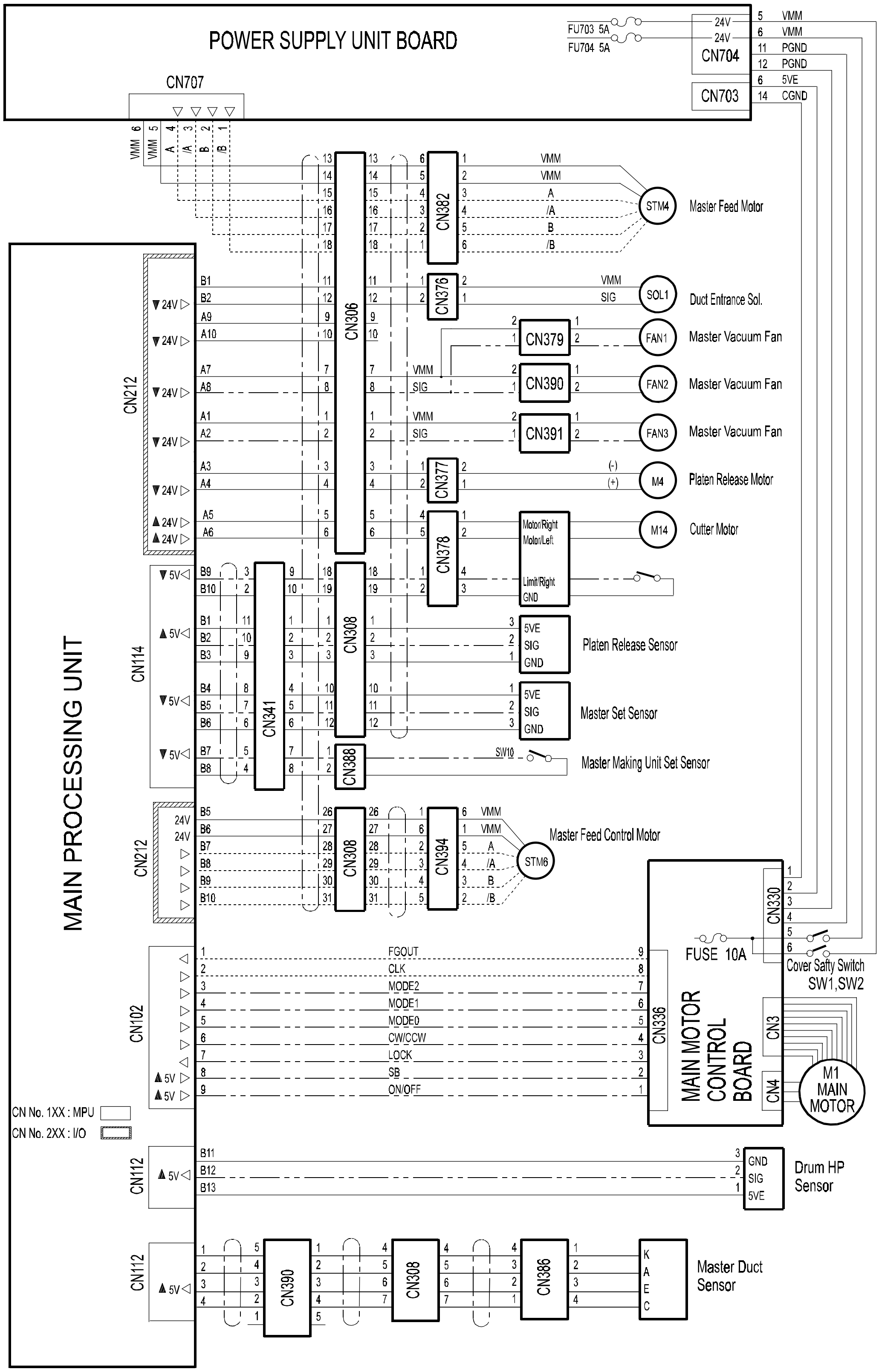
Section C



C244S503.WMF

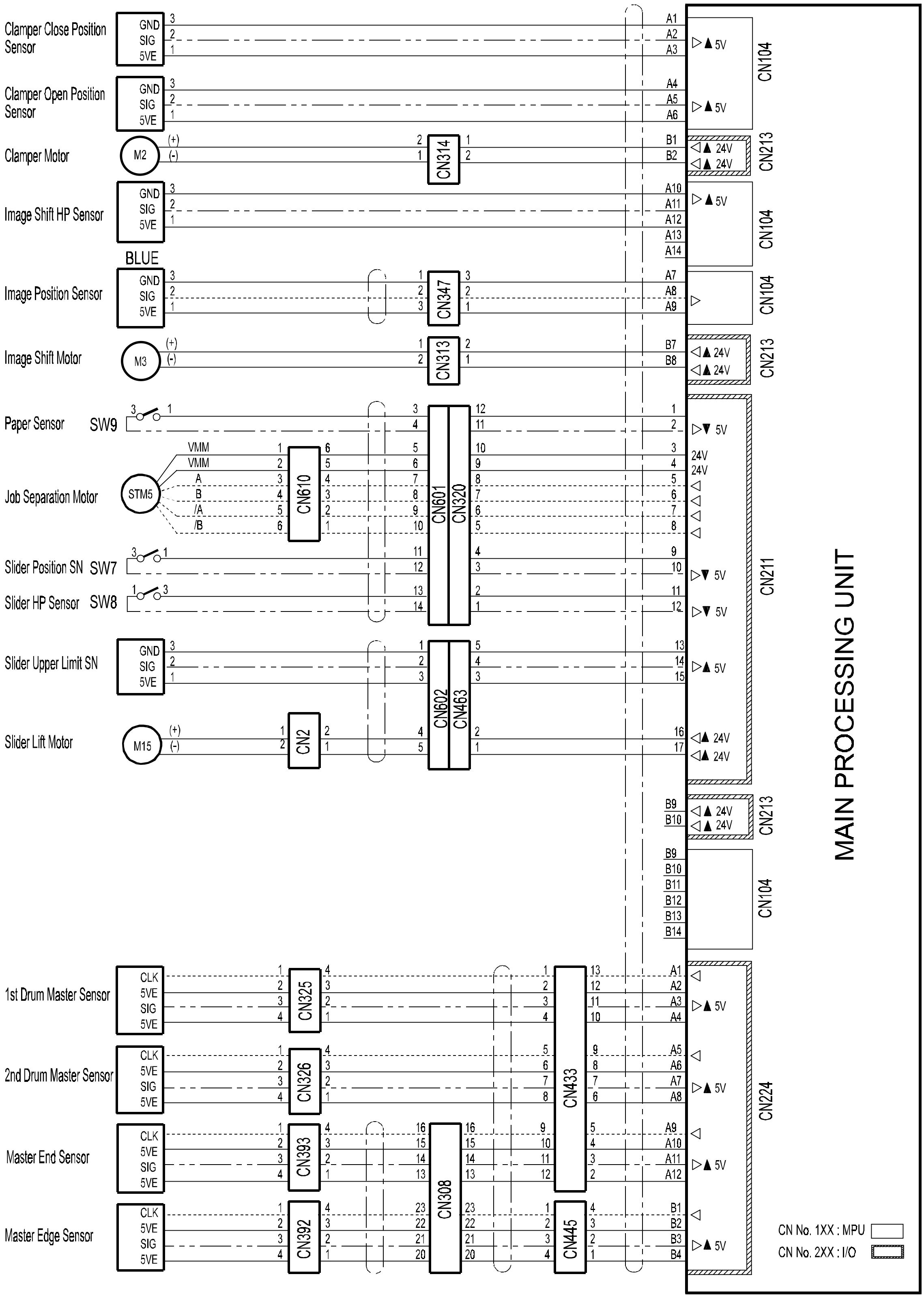
P-to-P

Section D



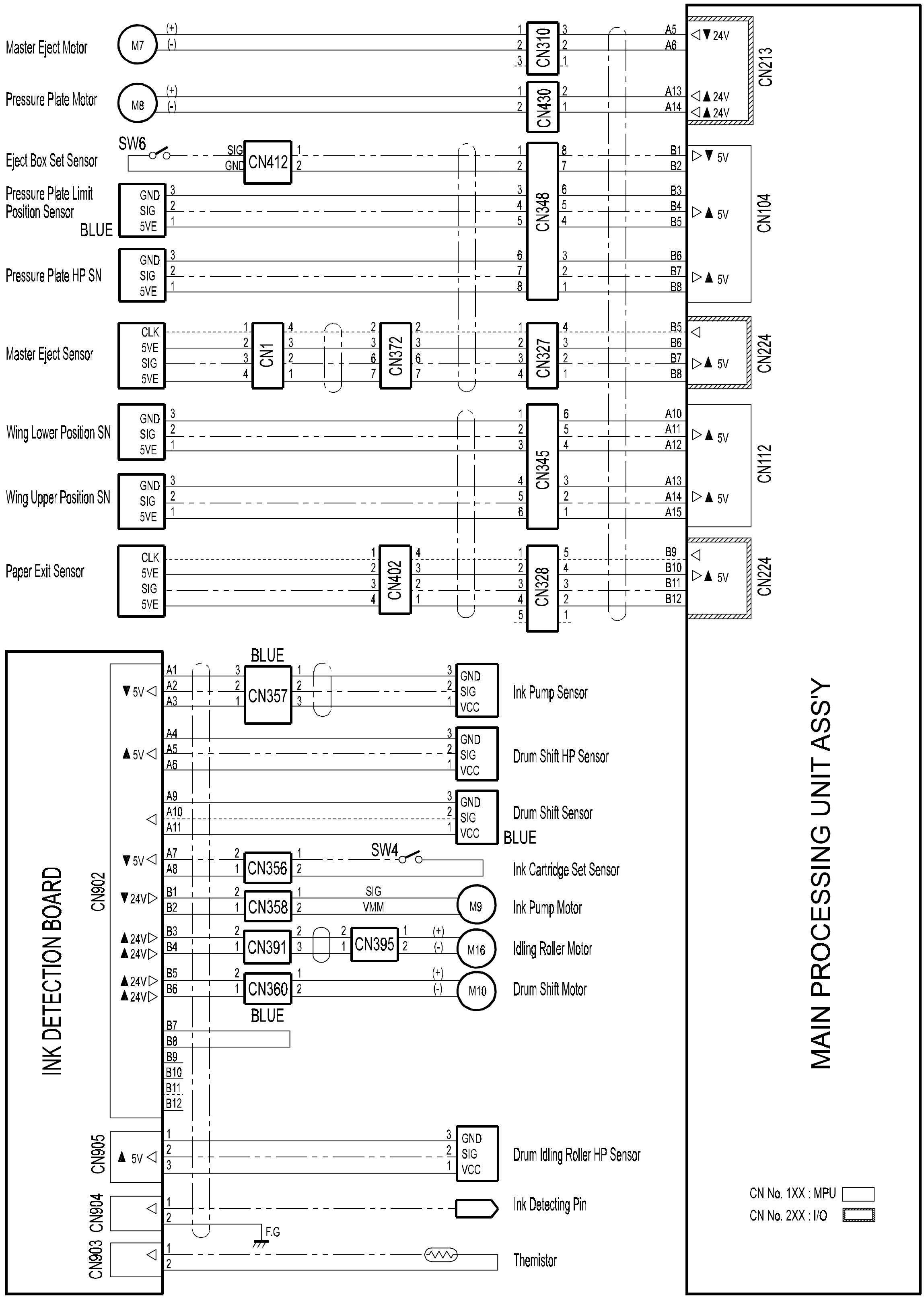
C244S504.WMF

Section E



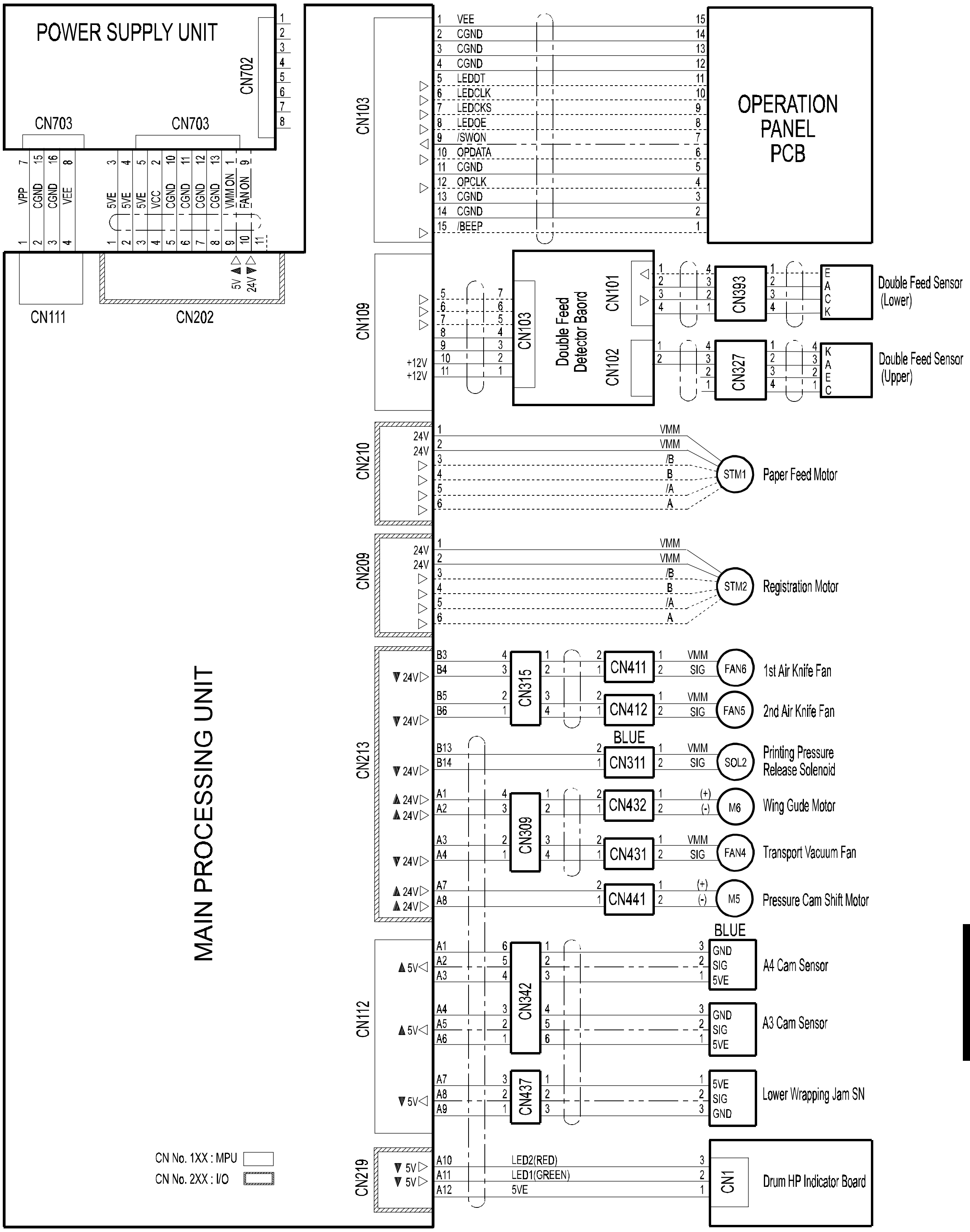
C244S505.WMF

Section F



C244S506.WMF

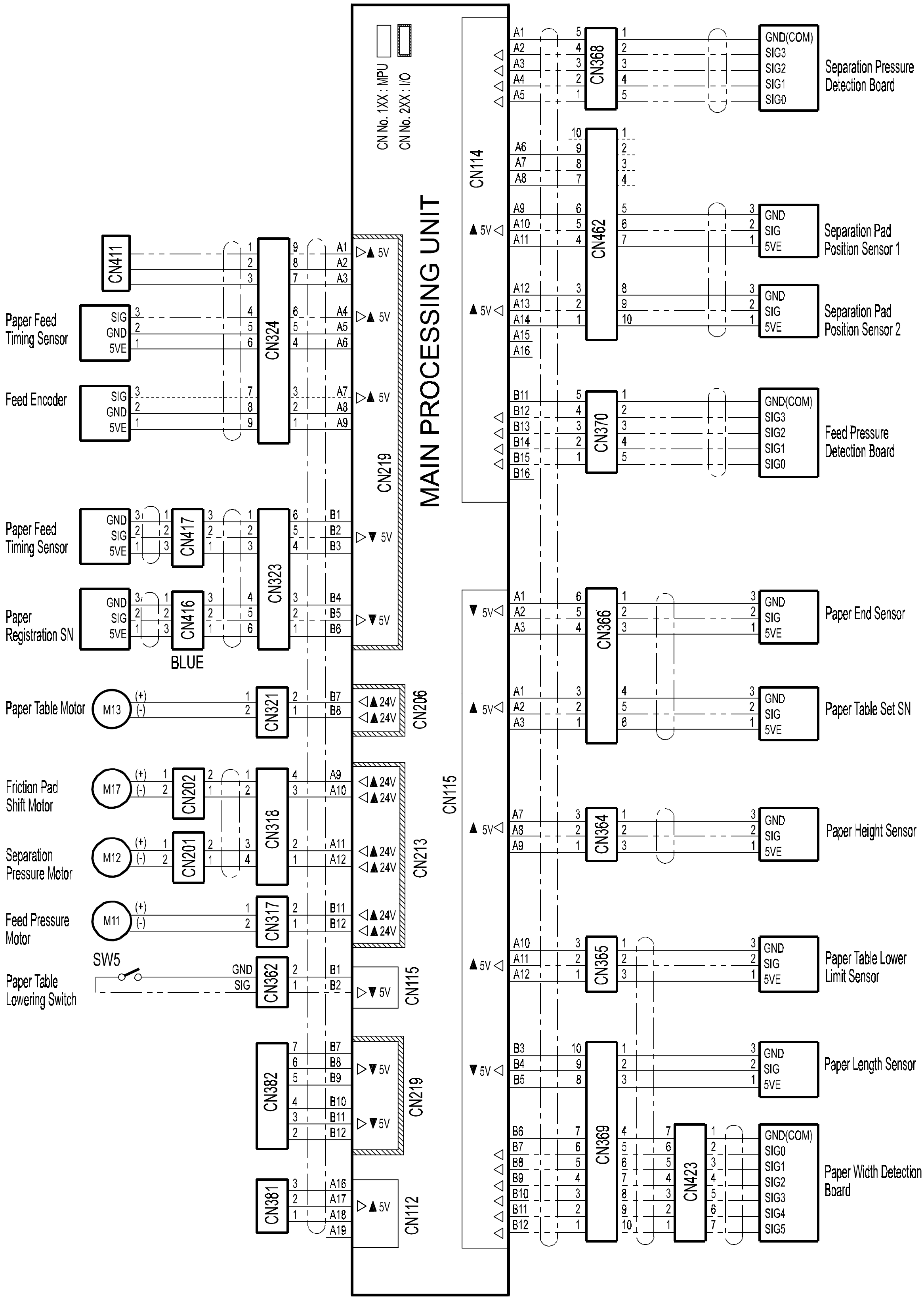
Section G



C244S507.WMF

P-to-P

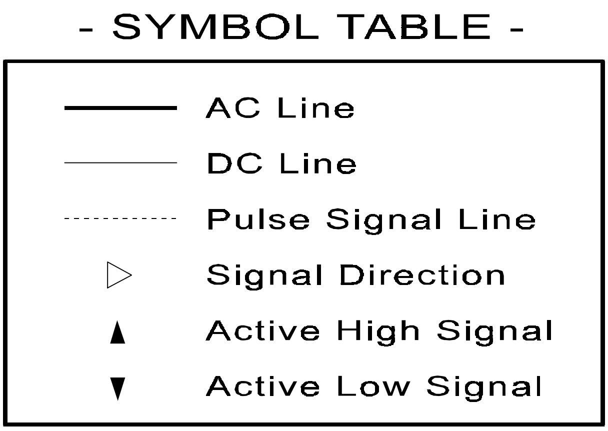
Section H


MAIN PROCESSING UNIT
CN No. 1XX : MPU
CN No. 2XX : I/O
CN114
CN115
CN219
CN206
CN213
CN112
Separation Pressure Detection Board
Separation Pad Position Sensor 1
Separation Pad Position Sensor 2
Feed Pressure Detection Board
Paper End Sensor
Paper Table Set SN
Paper Height Sensor
Paper Table Lower Limit Sensor
Paper Length Sensor
Paper Width Detection Board
Paper Feed Timing Sensor
Feed Encoder
Paper Registration SN
BLUE
Paper Table Motor
Friction Pad Shift Motor
Separation Pressure Motor
Feed Pressure Motor
SW5
Paper Table Lowering Switch
M13
M17
M12
M11
CN411
CN324
CN417
CN416
CN323
CN321
CN202
CN201
CN318
CN317
CN362
CN382
CN381
CN368
CN462
CN370
CN366
CN364
CN365
CN369
CN423

7.2 FOR MODEL #C239

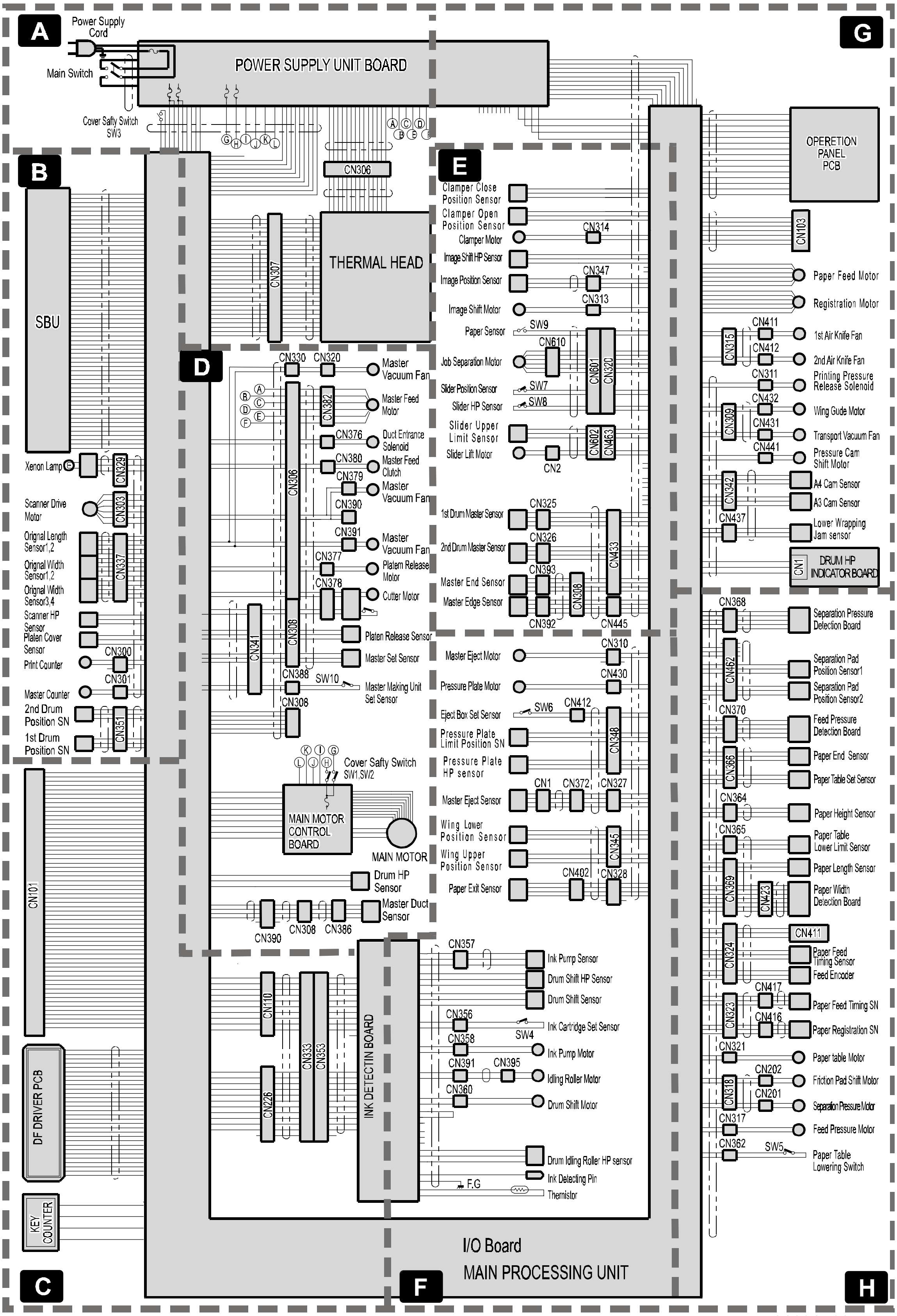
- Location Map
- Section A
- Section B
- Section C
- Section D
- Section E
- Section F
- Section G
- Section H

NOTE: The symbols used in the diagrams are as follows:



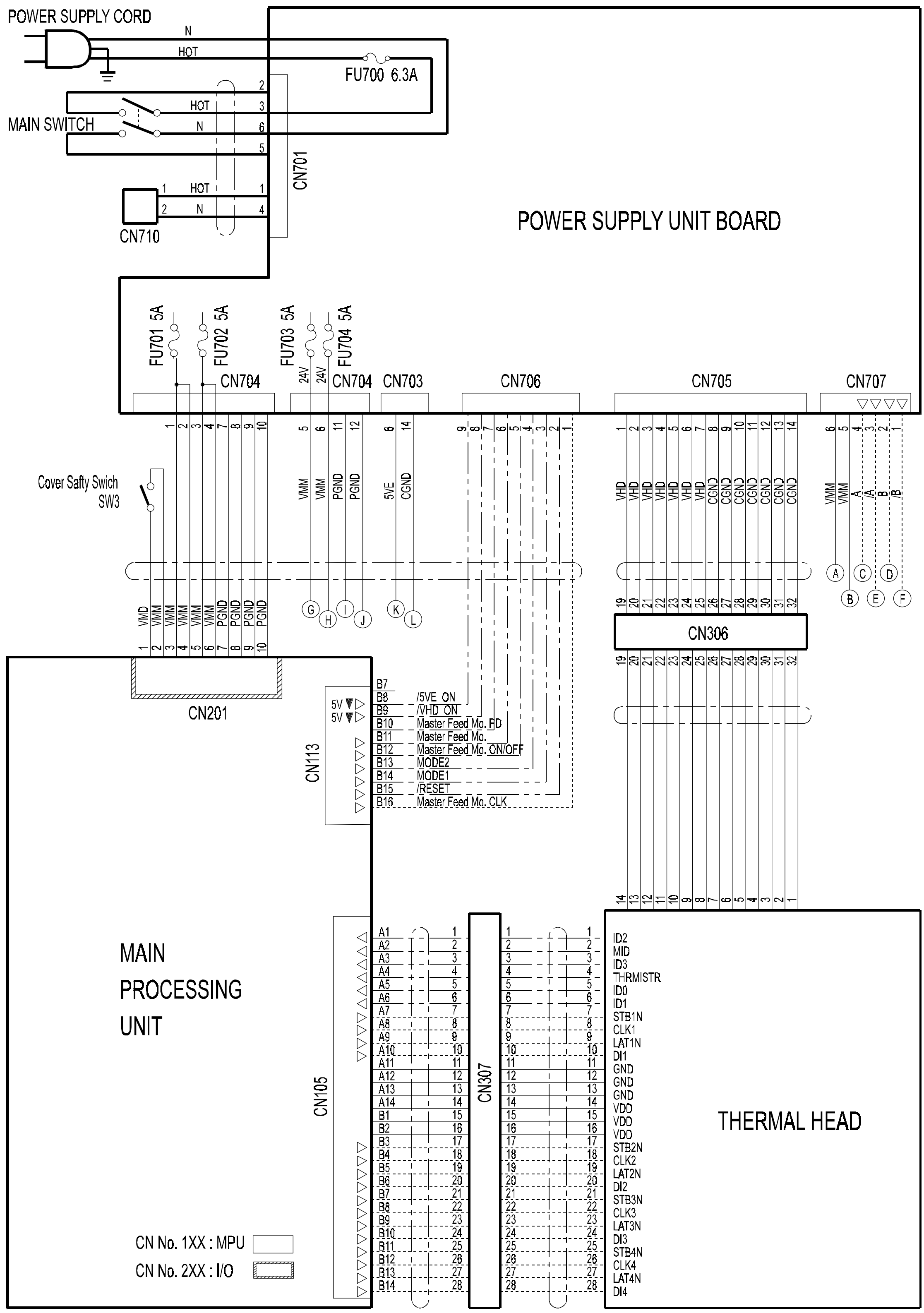
PP2.WMF

Location Map



C239S500.WMF

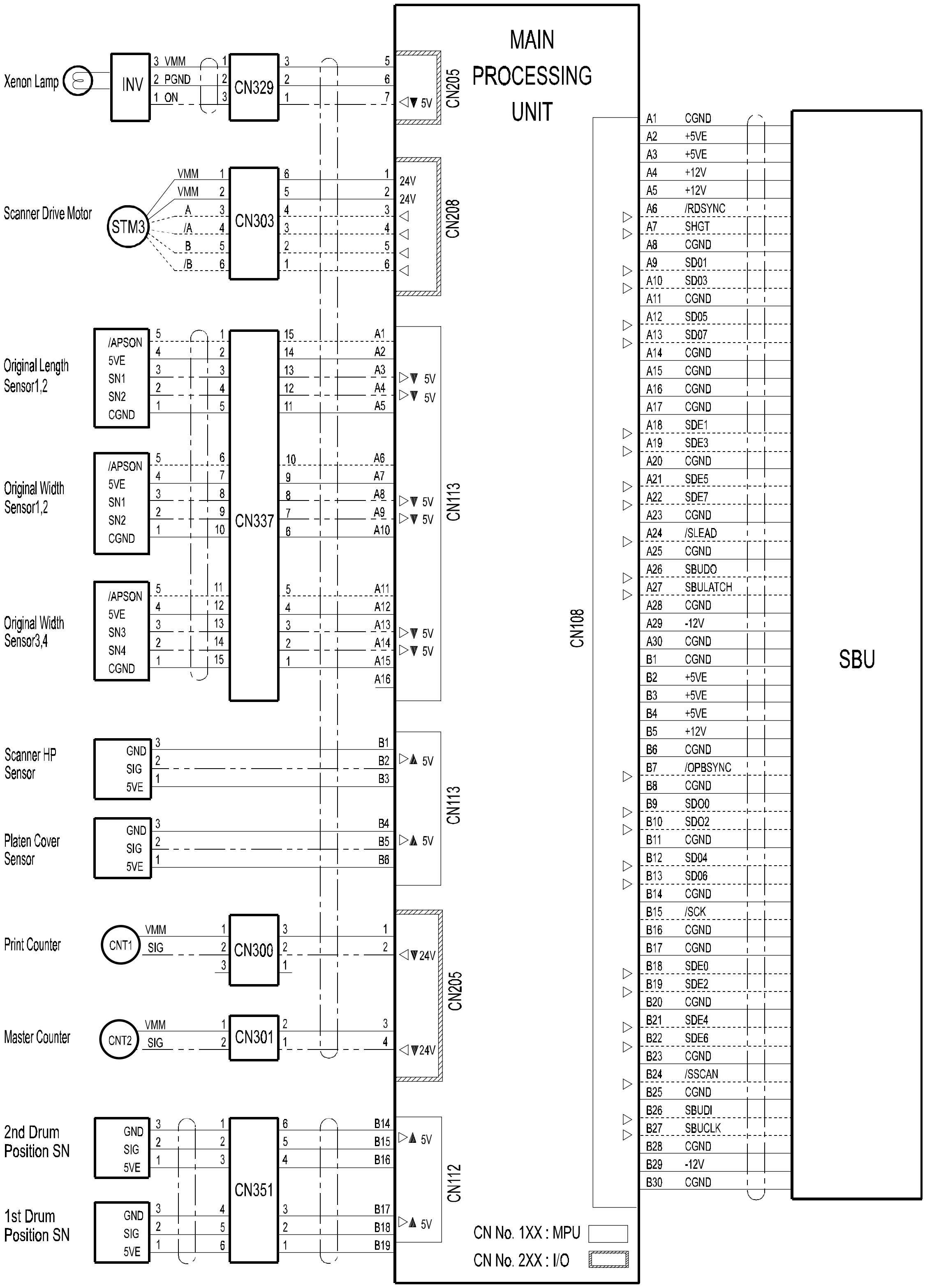
Section A



C239S501.WMF

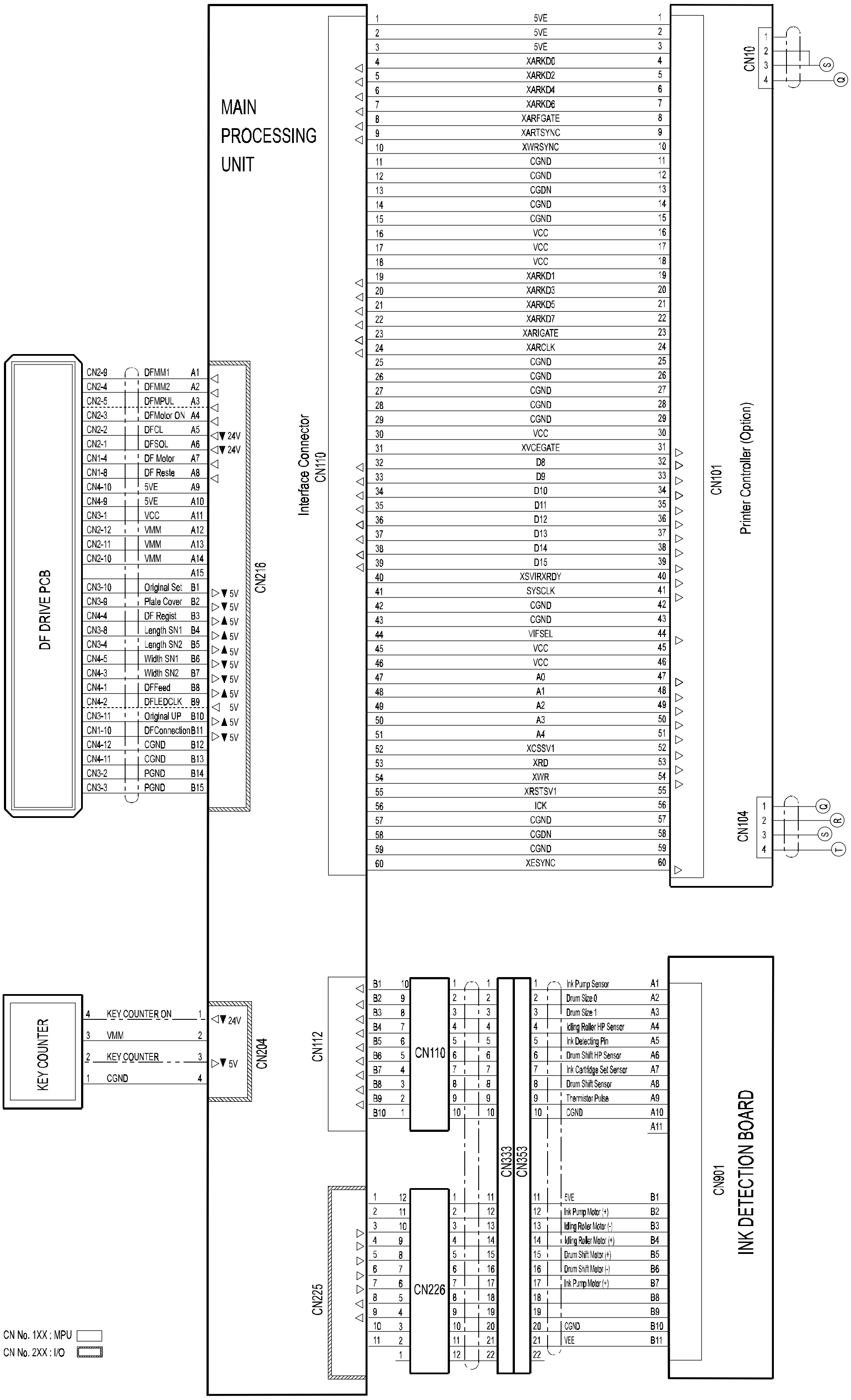
P-to-P

Section B



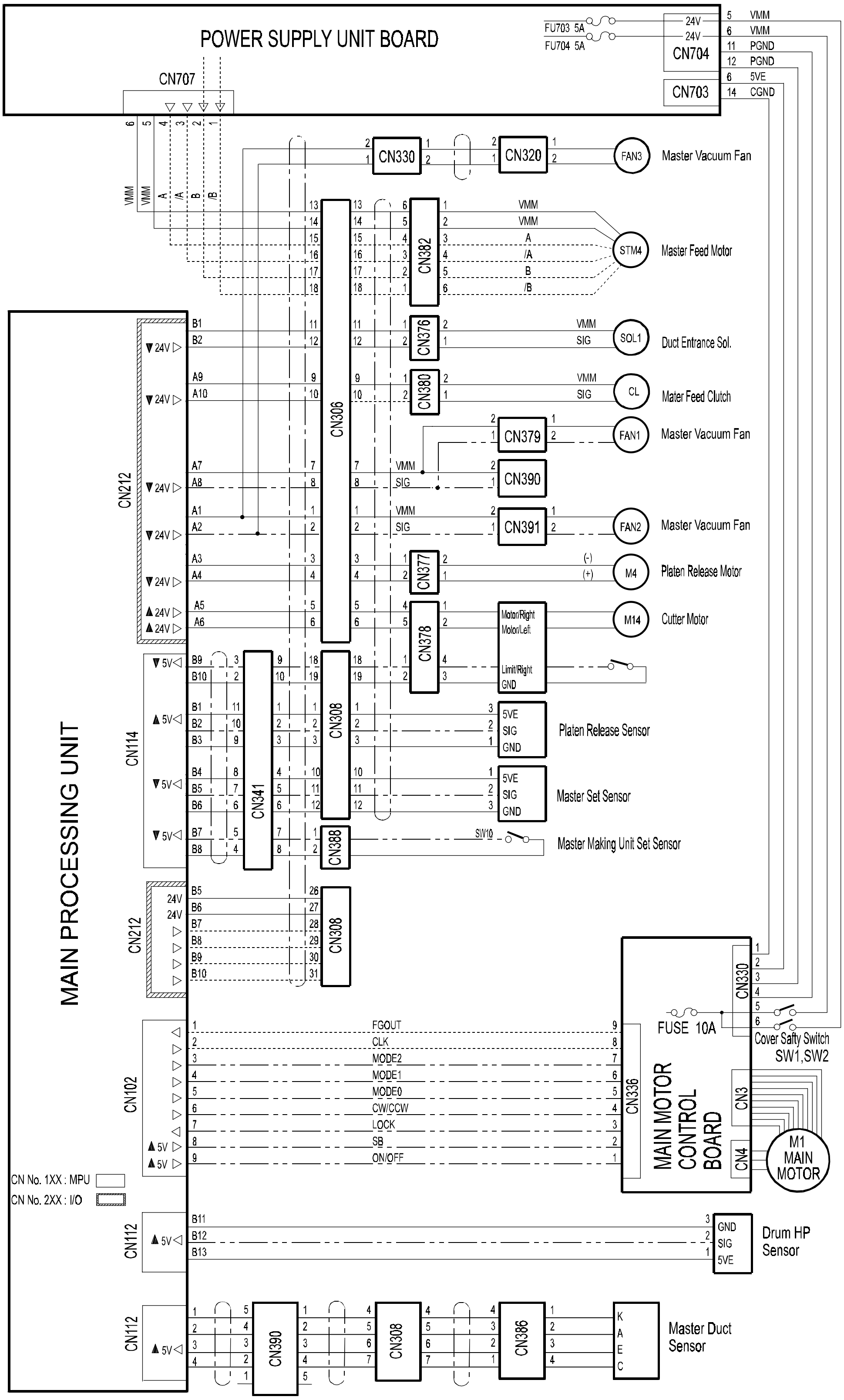
C239S502.WMF

Section C



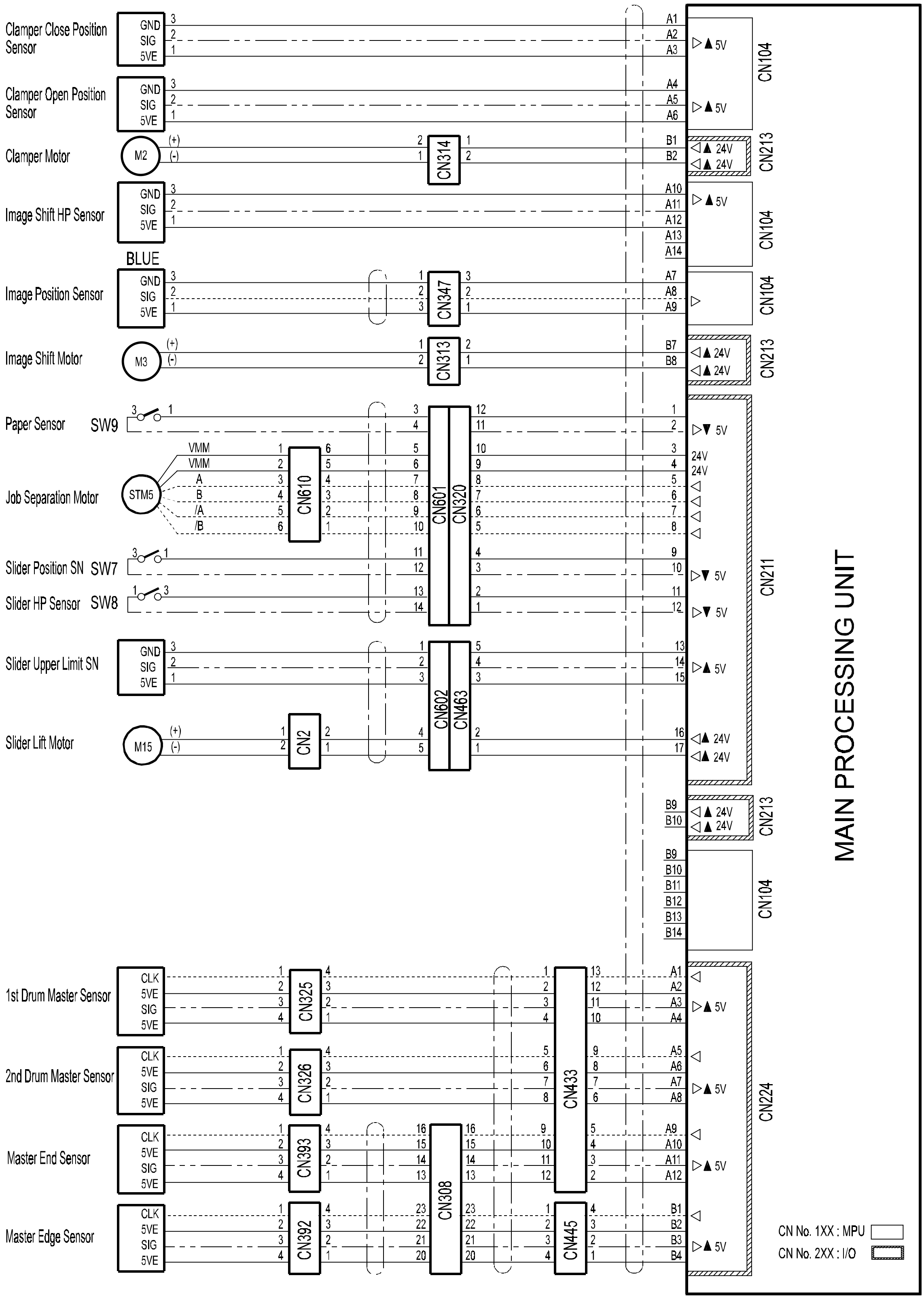
C239S503.WMF

Section D



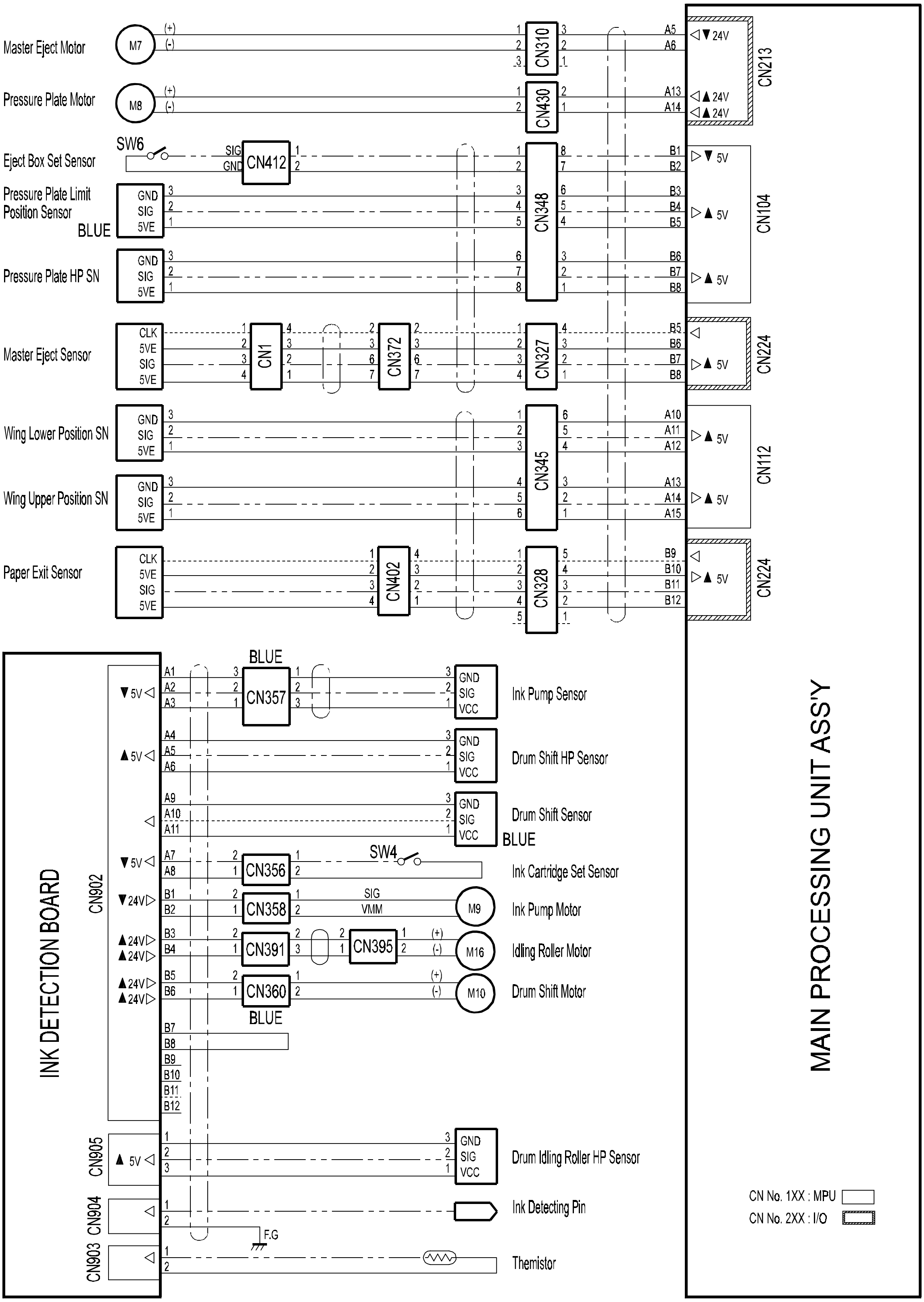
C239S504.WMF

Section E



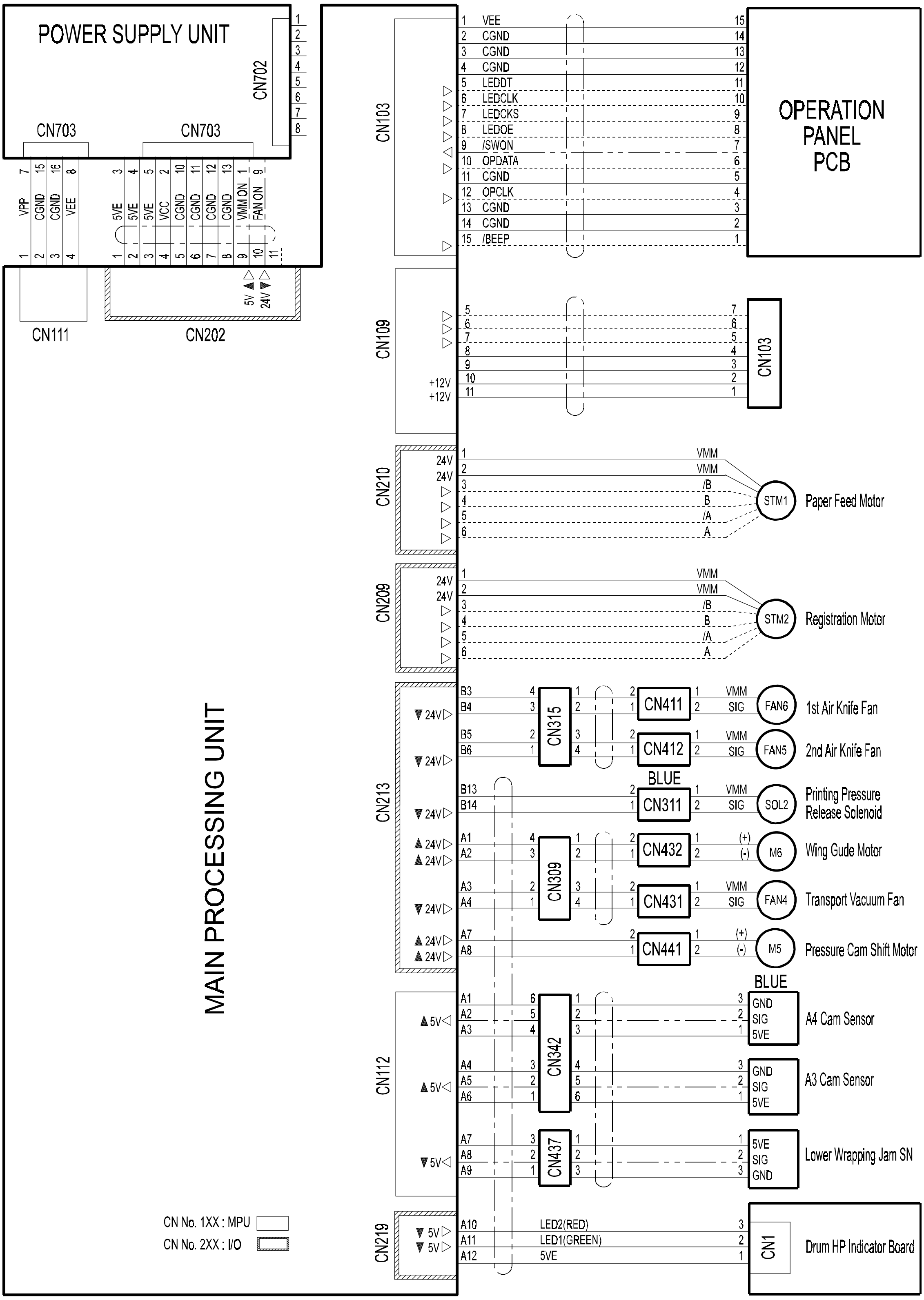
C239S505.WMF

Section F



C239S506.WMF

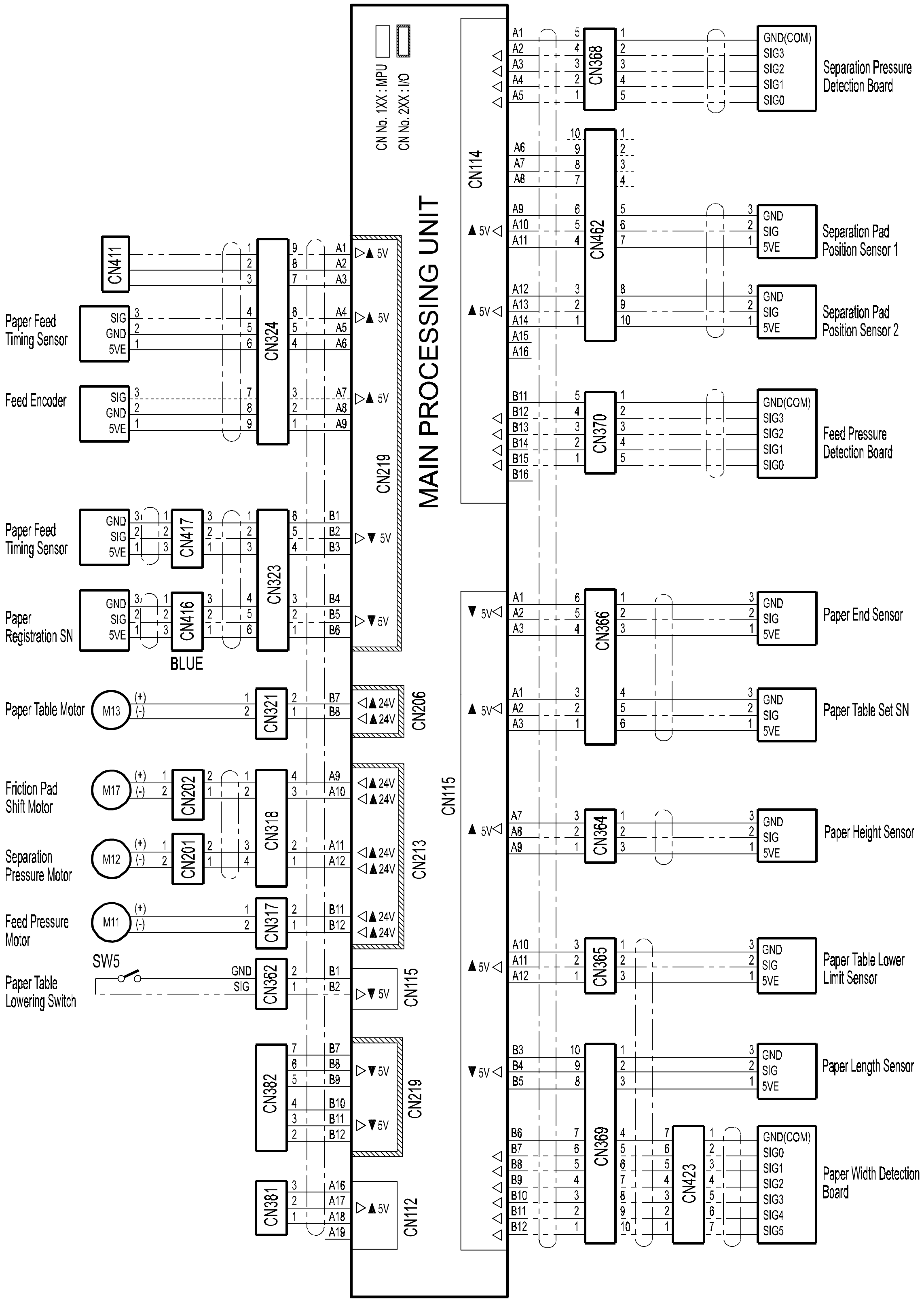
Section G



C239S507.WMF

P-to-P

Section H



C239S508.WMF